

BOSTON PUBLIC LIBRARY



3 9999 06583 174 3

ANNUAL REPORT  
OF THE  
TRANSIT DEPARTMENT

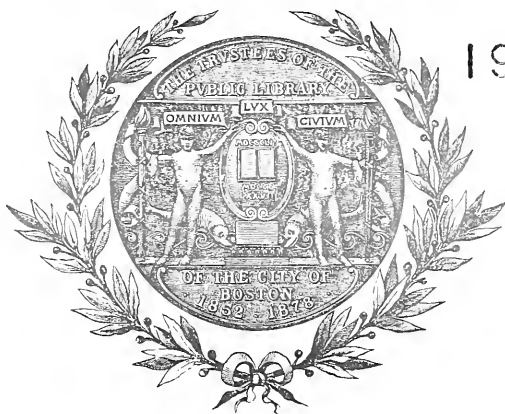


OF THE  
CITY OF BOSTON

1929

Nº \*6355.5A

1929



GIVEN BY

Carnegie Library of Pittsburgh

DEPARTMENT OF CITY TRANSIT

221  
Box  
2400  
B



COMPLIMENTS OF

TRANSIT DEPARTMENT—CITY OF BOSTON

THOMAS F. SULLIVAN, *Chairman,*  
NATHAN A. HELLER,  
JAMES B. NOYES,  
*Commissioners.*

---

Digitized by the Internet Archive  
in 2010 with funding from  
Boston Public Library

---

DEPARTMENT OF CITY TRANSIT  
REPORT

OF THE

TRANSIT DEPARTMENT

FOR THE

YEAR ENDING DECEMBER 31, 1929



CITY OF BOSTON  
PRINTING DEPARTMENT  
1930



\*6355.5 A

1929

Carnegie Library of Pittsburgh  
July 2, 1962





ANNUAL REPORT  
OF THE  
TRANSIT DEPARTMENT  
FOR THE YEAR ENDING DECEMBER 31, 1929.

1 BEACON STREET, BOSTON, MASS., January 1, 1930.

*To the Mayor and City Council of the City of Boston:*

The Transit Department submits the following report for the year ending December 31, 1929.

DORCHESTER RAPID TRANSIT.

On Saturday, December 21, the extension of rapid transit facilities in the Dorchester district, authorized by chapter 480 of the acts of the Legislature of 1923, was opened for public use.

For over 25 years the great Dorchester district of Boston had been urging and advocating improvement in street railway transportation. This agitation had taken the form of protests by individuals and groups, by boards of trade, improvement organizations and public meetings. For years investigations, studies and surveys had been made under legislative authority, but until the passage of chapter 480 of the acts of 1923 nothing was accomplished beyond the investigation stage.

Many of the earlier reports were concerned with the building of subways and it was not until 1914, in a report made to the legislature by a joint board consisting of the Boston

Transit Commission and the Public Service Commission, that the feasibility of adopting railroad lines as a part of the Boston Elevated Railway System was considered. Serious thought was given to the Shawmut Branch of the New York, New Haven and Hartford Railroad and it was the recommendation of the Joint Board that further study be given as to the desirability of utilizing the Shawmut Branch as a part of the Boston Elevated System.

This recommendation took definite form in 1919 when the Legislature provided for an investigation as to the desirability of constructing certain rapid transit circuits by means of surface tracks on or near existing railroad locations in the city, and again in 1920 when the Legislature directed that a further study be made of a comprehensive system of rapid transit for the Dorchester district. In 1921, the Legislature passed a resolve for a still further investigation and report of a comprehensive rapid transit system for the Dorchester district. This was followed by a resolve of the Legislature of 1922, providing for a study of the problem of extension of rapid transit facilities in the Dorchester district, together with estimates of costs of the entire work and of the cost of necessary alterations in existing facilities, a method of financing the undertaking and other questions such as the advisability of purchase by the city of rolling stock and equipment, together with a recommendation as to the terms of lease. There was also included the question of purchase or lease from the railroad company of any rights of way to be acquired and the terms under which such rights should be purchased or leased. This report was presented to the Legislature in 1923 and was followed by the enactment of chapter 480 of the acts of that year.

By this act the Transit Department was directed to extend the Dorchester Tunnel from its terminus at Andrew Square, South Boston, through and under Boston Street, private land, land of the Old Colony Railroad, Power Street and Dorchester Avenue, bringing the tunnel to the surface by an incline south of Dorchester Avenue and parallel to and on the west-erly side of the railroad tracks of the New York, New Haven and Hartford Railroad Company, known as the Boston Division, at a point between Dorchester Avenue and Columbia Road. From this point facilities were provided for surface operation, the line running substantially parallel to the

location of the New Haven tracks to the junction of these tracks near the present Harrison Square Station, with the tracks operated by the New Haven Railroad, known as the Shawmut Branch, thence continuing over the location of the Shawmut Branch to Mattapan. The Department was authorized in connection with the construction of this road to provide all necessary yards, tracks, stations, shelters and in general suitably to equip the road for proper operation by the Boston Elevated Railway.

Chapter 480 was approved by His Excellency, the Governor, on May 25, 1923, accepted by the City Council on September 10, 1923 and approved by His Honor, Mayor James M. Curley, on September 12, 1923, the evidence of such acceptance by the city being filed with the Secretary of the Commonwealth on the following day.

The acceptance on the part of the Boston Elevated Railway by a vote of the Board of Directors was given on December 31, 1923 and evidence thereof filed with the Secretary of the Commonwealth on January 7, 1924.

Before the work of construction of the facilities from the extended Dorchester Tunnel and incline to Mattapan could proceed, certain statutory approvals, acceptances and agreements were required. The Department of Public Utilities issued an order on January 29, 1924, upon petition of the City, determining \$950,000 as the sum to be paid to the Old Colony Railroad for the entire Shawmut Branch free from all encumbrances, etc. On March 28, 1924, a certificate was received from the Secretary of the Commonwealth that His Honor, Mayor Curley had filed in that office on March 25 agreement on the part of the railroad companies to accept in payment for the Shawmut Branch the sum determined by the Department of Public Utilities.

Approval by the Department of Public Utilities of plan under which reasonably practical and adequate rapid transit passenger service could be safely operated from Welles Avenue to Mattapan was given on June 13, 1924.

Approval by the railroad companies of plans affecting the operation of main line railroad tracks between Andrew Square and Harrison Square was given on September 17, 1924.

Agreement between the City, the Old Colony Railroad Company and the New York, New Haven and Hartford Railroad Company, relative to compensation to be paid for acqui-

tion of right of way for surface railway over location of main line tracks between Andrew Square and Harrison Square, was executed on October 16, 1924.

Contract for the use of premises and equipment was executed by the City with the Boston Elevated Railway on October 17, 1924.

Location plan was filed with the Commissioner of Public Works on October 17, 1924.

With these preliminary agreements and acceptances a matter of record, the Department proceeded with the work of construction.

The first section, known as Section K, was deemed, under the provisions of the act, a part of the Dorchester Tunnel and was so designated for the reason that the last section of the Dorchester Tunnel was called Section J. It consisted of an extension of this tunnel from its terminus at Andrew Square for a distance of about 1,300 feet, coming to the surface by incline parallel to and on the westerly side of the New York, New Haven and Hartford Railroad tracks. This section was started on December 3, 1924.

From this point transportation service was to be supplied by surface operation and the work of construction was apportioned off by sections, as follows:

Section 1, starting at the incline and extending along the line of the Boston Division of the New York, New Haven and Hartford Railroad to a point near Harrison Square, a distance of about  $1\frac{3}{4}$  miles, with two stations known as Columbia and Savin Hill. Work on this section was begun on September 9, 1925.

Section 2, located on the Shawmut Branch, covering that portion of the line from Harrison Square to Geneva Avenue, about half a mile in length and including the Fields Corner Transfer Station. Work on this section was started August 30, 1926.

Section 3, extending from Geneva Avenue to Peabody Square, about 1 mile in length and including Shawmut Station. Work was started on this section September 13, 1926.

Section 4, from Peabody Square to about 600 feet south of Adams Street, near Cedar Grove Cemetery, a distance of about three-fourths of a mile, and including Ashmont Transfer Station,

Codman Street Car Yard and Cedar Grove Station. Work was started on September 21, 1927.

Section 5A, extending from about 600 feet south of Adams Street near Cedar Grove Cemetery to Milton Station, a distance of 0.64 miles. Work was started September 10, 1928.

Section 5B, embracing Milton Station, extending to a point just beyond Central Avenue, including Central Avenue Station, a distance of 0.45 miles. Work was started April 1, 1929.

Section 5C, extending from about 650 feet west of Central Avenue to Mattapan Square and including Valley Road and Mattapan Stations, a distance of 0.93 miles. Work was started June 17, 1929.

On December 21 last, with the completion of Section 5C, the Dorchester Rapid Transit, commencing at Andrew Square and terminating at Mattapan Square, was opened for public use over its entire length, a distance of  $6\frac{1}{4}$  miles, and thus made available direct rapid transit between Harvard Square and Mattapan Square, a distance of  $11\frac{3}{4}$  miles, with running time of thirty-five minutes.

Up to the opening of the Extension, passenger transportation in the Dorchester district was provided by steam and trolley with no connection between the two systems. The flow of traffic in Dorchester was not continuous but rather a movement into the city in the morning and a return at night. The estimated total daily passenger traffic of the New York, New Haven and Hartford railroad by way of the Shawmut Branch was 9,167 supplied by a small number of trains, not over eleven, principally in the morning and evening rush hours and practically no service during the rest of the day.

The construction of the Dorchester Extension called for the building and equipping of a high speed railway, requiring stations, underpasses and overpasses crossing the rapid transit line for freight sidings of the New Haven main line, relocation of New Haven main line tracks, rebuilding, relocating or widening of bridges, abolition of grade crossings, installation of tracks, signals, lighting and power equipment, sub-stations in connection with the power distributing system, approaches, viaducts, busways, passageways, sewers, drainage systems, concrete retaining walls, foundations, roadbed, ballast, station platforms, conduits, proper regard for the operation of steam road facilities during construction, and the acquisition of interests in land required.

The following table indicates the magnitude of the construction requirements of the work:

Earth Excavation . . . .	250,000 cu. yds. (approximate)
Rock Excavation . . . .	63,000 cu. yds. (approximate)
Gravel Fill . . . .	138,000 cu. yds. (approximate)
Concrete . . . .	51,000 cu. yds. (approximate)
Reinforcing Rods . . . .	2,600 tons (approximate)
Structural Steel . . . .	2,900 tons (approximate)

Under authority of chapter 193 of the Acts of 1925, the Department entered into contracts with the Boston Elevated Railway for the temporary use by the public of intervening completed portions of the Extension, thus obviating the necessity of awaiting the opening of the entire road from Andrew Square to Mattapan.

Such temporary use was begun, as follows:

From Andrew Square to Fields Corner Nov. 5, 1927	2.45 miles
From Andrew Square to Ashmont Sep. 1, 1928	3.73 miles
From Andrew Square to Milton Aug. 26, 1929,	4.95 miles

The cost of this Extension from Andrew Square to Mattapan is . . . . . \$11,755,728 64

of which there was expended for Section K . . . \$1,320,970 13  
and for Dorchester Rapid Transit . . . 10,434,758 51

Total . . . . . \$11,755,728 64

Of the total of \$11,755,728.64

the cost of administration was	\$218,992 24	1.86%
the cost of engineering was	764,748 84	6.51%
the cost of interest was	662,008 04	5.63%
the cost of acquisition of the Shawmut Branch, and right, title and interest in real estate was	1,882,197 08	16.01%
the cost of equipment was	2,254,506 24	19.18%
the cost of construction expense was	5,973,276 20	50.81%
	<u>\$11,755,728 64</u>	<u>100.00%</u>

No figure appears in this statement as the cost of equipment for Section K as such equipment, in accordance with the pro-

visions of the act, was provided by the Boston Elevated Railway. The premises are leased to the Boston Elevated Railway, Section K being at the rate of  $4\frac{1}{2}\%$  of the net cost and figured in as a part of the Dorchester Tunnel. The Dorchester Rapid Transit was leased October 17, 1924, for a period extending from the beginning of the use of the premises and equipment to the expiration or termination of the present lease of the Dorchester Tunnel—at an annual rental rate of  $4\frac{1}{2}\%$  per annum upon the fair and reasonable cost, as determined by the Department of Public Utilities, of the premises and equipment; provided, however, that the annual rental rate shall be sufficient to provide for an amount equal to one-half of one per cent of said cost in addition to the annual amount of interest on the bonds issued to pay for said cost, but not less than said four and one-half per cent in any event.

#### ORDINANCE ESTABLISHING SALARIES OF COMMISSION

On June 18 the City Council passed the following ordinance concerning the salaries of the Transit Commissioners:

“Be it ordained by the City Council of Boston, as follows:

Section 5 of chapter three of the Revised Ordinances of 1925 is hereby amended in the clause establishing the salary of the chairman of the transit commissioners by striking out the words “seventy-five hundred” and inserting in place thereof the words “nine thousand,” and in the same clause establishing the salaries of the two other commissioners by striking out the words “five thousand” and inserting in place thereof the words “seventy-five hundred.”

This ordinance was approved by His Honor Mayor Malcolm E. Nichols on June 19.

#### BUTLER STREET BRIDGE AND STATION

The City Council on June 14 passed the following order:

“CITY OF BOSTON In City Council ORDERED: That the Transit Department, through his Honor the Mayor, be and said commission hereby is respectfully requested in accordance with its estimate furnished the City Council November 13, 1928, to construct a foot bridge and station as part of the new Dorchester Rapid Transit near Butler Street in Ward 17.”

The following report called for by the foregoing ordinance was transmitted to His Honor the Mayor under date of June 26:

“HONORABLE MALCOLM E. NICHOLS,  
*Mayor of Boston.*

DEAR SIR,— Herewith is returned Order of the City Council dated January 14 relative to the construction of a foot bridge and station as part of the Dorchester Rapid Transit near Butler Street, Mattapan.

This matter was considered by the Trustees of the Boston Elevated Railway and under date of December 11, 1928, we were advised that they could not justify an additional station at Butler Street.

As the act authorizing this work requires the approval of changes in plans such as are contemplated in this Order by the Public Trustees, the request of the Council cannot be complied with.

Yours very truly,  
CITY OF BOSTON TRANSIT DEPARTMENT  
By|(sgd) THOMAS F. SULLIVAN,  
*Chairman.*

#### DORCHESTER TUNNEL

In accordance with the request received from the Boston Elevated Railway Company with reference to a possible underground connection from the stairway in the Dorchester Tunnel Station to the South Station the Department stated on January 11 that it had made three studies with cost estimates.

Study 1, Plan No. 16848, showed a connection directly into the midway of the South Station with the stairway entrance and exit located at a point most readily seen by the railway passengers. It would be very expensive, however, as it would require the change over of large pipes beneath the midway floor and also extensive alterations in the men's lavatory located on the lower level. It was estimated to cost \$75,000.

Study 2, Plan No. 16849, showed another connection into the midway. It had the disadvantage of being a curved passageway instead of running in a straight line as in Study 1, and the stairway entrance was not located in quite so conspicuous a position. It avoided the men's lavatory, however, and was estimated to cost \$50,000.



Study 3, Plan No. 16850, showed a shorter passageway with a divided stairway in the main entrance of the South Station. It would require considerable cutting through the heavy concrete between the foundations of the main columns, and was estimated to cost \$35,000.

The engineer of the New Haven Road felt that there would be little if any objection on the part of the terminal authorities to the schemes shown on Studies 1 and 2. On Study 3, because it did not block the main entrance, he was of the opinion that there would be little, if any, objection.

The foregoing estimates did not include any real estate damages that the terminal company might demand.

#### LEGISLATION

The General Court passed the following:

Chapter 297, Acts of 1929. An Act to Provide for the Construction of a Vehicular Tunnel between Boston Proper and East Boston. See Appendix I.

Chapter 383. An Act Relative to Transportation Facilities in the Metropolitan District. See Appendix II.

#### EAST BOSTON VEHICULAR TUNNEL

Chapter 297, Acts of 1929, providing for the construction of a vehicular tunnel between Boston Proper and East Boston required that the act should take effect upon its acceptance on or before July 1, 1929, by vote of the City Council of Boston subject to the provisions of its charter, but for the purpose only of such acceptance, it should take effect upon its passage.

A public hearing was held by the City Council on June 5 at which the Transit Department was represented by the entire board and its chief engineer.

On June 18 the City Council passed the following order of acceptance:

*"Ordered that chapter 297 of the Acts of 1929, entitled 'An Act to provide for the construction of a Vehicular Tunnel between Boston Proper and East Boston' be and the same is hereby accepted."*

This order was approved by His Honor Mayor Malcolm E. Nichols on June 19.

Following a conference with His Honor Mayor Nichols and with his approval a zone was prescribed for locating the

tunnel between the limits specified and on September 17 formal application was transmitted to the Secretary of War for approval of the War Department to carry out the work of construction. No decisive action was taken by the Federal authorities pending the submission by the Transit Department of plans indicating the exact position of the tunnel.

Following this a report was received from the Division of Metropolitan Planning and the City Planning Board, a copy of which had been sent to His Honor Mayor Nichols, who thereupon notified the Transit Department that he was prepared to approve a plan based on this report. The following plans were thereupon submitted to His Honor the Mayor who affixed his approval thereto:

- Plan T. T. 8    Location Plan
- Plan T. T. 9    Boston Approach
- Plan T. T. 10   East Boston Approach.

An application was then made to the War Department and the Massachusetts Department of Public Works with a request that permits be issued for the construction of the tunnel as shown on the foregoing plans. Such approvals with permits and licenses were subsequently received.

No work of construction under the approved plans was commenced in view of the request of His Honor the Mayor for the modification of the plans in accordance with the suggestions of a conference committee which had been appointed by him.

#### BOYLSTON STREET SUBWAY

##### *Kenmore Station*

At the request of His Honor Mayor Nichols, the Department transmitted to the Board of Trustees of the Boston Elevated study No. 9 providing for the elimination of surface tracks in Governor Square in accordance with the provisions of chapter 341 of the Acts of 1925. The following prints were included:

- 16829   Cross section of Beacon Street at the proposed incline.
- 16834   Plan and profile of Study No. 9.
- 16835   Cross section of Study No. 9.
- 16836   Suggested bus area at Kenmore Station, Study A.
- 16838   Governor Square surface plan without bus connection.

Also two prints of plan 16836 showing vehicular traffic moving inward and outward through Governor Square and connecting streets.

The estimated cost of Study No. 9 was \$2,975,000. If the bus area was required the additional cost for the passageway, stairway, busway platform and necessary fences would be approximately \$25,000.

#### CAUSEWAY STREET UNDERPASS

Under authority of chapter 18 of the resolves of 1929 the Department was directed to conduct an investigation relative to the construction and maintenance for foot traffic of an underpass or underpasses under Causeway Street near the North Station.

The text of the chapter follows:

#### (CHAP. 18.)

RESOLVE PROVIDING FOR AN INVESTIGATION RELATIVE TO THE ADVISABILITY AND FEASIBILITY OF CONSTRUCTING AN UNDERPASS OR UNDERPASSES UNDER CAUSEWAY STREET NEAR THE NORTH STATION IN THE CITY OF BOSTON.

*Resolved*, That the transit department of the city of Boston is hereby directed to investigate relative to the advisability and feasibility of constructing and maintaining for foot traffic an underpass or underpasses under Causeway street in the city of Boston near the station of the Boston and Maine Railroad, commonly called the North Station. Said department shall also investigate and consider the probable cost of such underpass or underpasses and shall report to the general court the results of its investigation and its recommendations, if any, together with drafts of legislation to carry said recommendations into effect, by filing the same with the clerk of the house of representatives on or before the first Wednesday of December in the current year. Said department may expend for the purposes of this investigation such sum, not exceeding five hundred dollars, as may be appropriated by said city out of the receipts in the treasury thereof.

— *Approved April 11, 1929.*

The following order was passed by the City Council on June 24th to provide an appropriation to meet the expenses of the investigation:

## CITY OF BOSTON

### IN CITY COUNCIL

*Ordered*, That in accordance with chapter 18 of the Resolves of 1929, a sum not in excess of \$500, be and hereby is appropriated, to be expended by the Transit Department, for an Investigation Relative to the Construction of an Underpass under Causeway Street, near the North Station, said sum to be charged to the Reserve Fund.

This order was approved by His Honor the Mayor on June 26, and the Department on December 2 submitted to the Legislature its report, which follows:

---

December 2, 1929.

*To the Honorable the Senate and House of Representatives of the Commonwealth of Massachusetts.*

Chapter 18 of the Resolves of 1929, entitled "Resolve providing for an Investigation relative to the Advisability and Feasibility of Constructing an Underpass or Underpasses under Causeway Street near the North Station in the City of Boston," was approved April 11, 1929, and provides as follows:

*Resolved*, That the transit department of the city of Boston is hereby directed to investigate relative to the advisability and feasibility of constructing and maintaining for foot traffic an underpass or underpasses under Causeway street in the city of Boston near the station of the Boston and Maine Railroad, commonly called the North Station. Said department shall also investigate and consider the probable cost of such underpass or underpasses and shall report to the general court the results of its investigation and its recommendations, if any, together with drafts of legislation to carry said recommendations into effect, by filing the same with the clerk of the house of representatives on or before the first Wednesday of December in the current year. Said department may expend for the purposes of this investigation such sum, not exceeding five hundred dollars, as may be appropriated by said city out of the receipts in the treasury thereof.

In accordance with the foregoing resolve the city council on June 24 made an appropriation of \$500 which was approved by the mayor on June 26, 1929.

Herewith is submitted report and plans prepared by the chief engineer of this Department, explaining in detail three possible locations for underpasses, together with estimates of cost.

The Department, after carefully studying the conditions on the ground, recommends the construction of one or more of these underpasses.

Herewith is submitted draft of proposed legislation.

Respectfully submitted,  
THOMAS F. SULLIVAN,  
NATHAN A. HELLER,  
JAMES B. NOYES,  
*Transit Department, City of Boston.*

---

## ENGINEER'S REPORT.

---

TRANSIT DEPARTMENT, November 22, 1929.

Messrs. SULLIVAN, HELLER and NOYES, *Commissioners, City of Boston Transit Department.*

GENTLEMEN,— In compliance with your request for studies and cost estimates for an underpass or underpasses under Causeway Street near the North Station, I hereby submit the following report with plans and estimates:

Causeway Street lies directly in front of the North Station, which has a frontage of about 400 feet and has three main entrances for passengers. The distance across Causeway Street is about 85 feet between curbs. In this space there are two roadways with a safety island between. The safety island is about 10 feet wide, and leaves a roadway of 45 feet on the southerly side and 30 feet on the side adjacent to the North Station. Opposite the North Station are two streets, Canal and Friend, which lead directly into Causeway Street. It is at these points that the greatest number of pedestrians cross Causeway Street to and from the station. Traffic counts made by the Boston Traffic Commission show a total of approximately 50,000 entering and leaving the station daily opposite these streets. The greatest number per hour at these two points is approximately 10,000.

There is a heavy vehicular traffic along Causeway Street,

which causes considerable delay to pedestrians, although there are comparatively few accidents, a record for two years and eleven months showing a total of only 19 accidents to pedestrians by automobiles near these two points.

The Boston Elevated Railway structure is directly over the street, the station platforms running parallel to the North Station. Under this structure is a passageway and lobby, the floor of which clears the street by about 14 feet. In this lobby are located ticket offices, turnstiles, etc., and the possibility of making use of this passageway as a footbridge for pedestrians desiring to cross Causeway Street has been considered. It is found that it would require considerable alteration and addition to the structure to put such a plan into effect, and it is extremely doubtful if a passageway of this sort would be used to any extent, owing to the height above the street and the consequent long flights of stairs which would be required at each end.

The possibility of building one or more underpasses under Causeway Street has been studied, and the plans submitted herewith<sup>1</sup> show studies for three such passageways.

Study "A" shows an underpass crossing at the east side of Canal Street and running to the easterly entrance of the North Station.

Study "B" shows a passageway from the westerly side of Canal Street running to the center entrance of the station.

Study "C" shows an underpass from the westerly side of Friend Street, where a stairway would be located in private property, and passageway running directly across to the westerly entrance of the station.

Each of these passageways has a width of 8 feet and a height from floor to ceiling of  $7\frac{1}{2}$  feet. It is planned to have the walls covered with enameled tile, and also to have the passageways well lighted at all times. Drainage would be taken care of by the construction of sumps with automatic ejectors capable of pumping any leakage or rain water up to the sewers. The roofs would be built as near the street surface as possible, thereby requiring a minimum climb at either end. If stairways are provided, as shown on the plans, there will be about 15 risers at each stairway, as the floor of the passageway is 9 feet below the street surface.

Consideration has been given to the use of ramps instead

---

<sup>1</sup> Plans on file in the office of the Department.

of stairways at the ends of the passageways. The ramps on a 12 per cent grade would be about 75 feet long, and would necessarily leave a long open incline, which would have to be fenced in at the sides and end. No provision was made in the design of the station to accommodate any underpasses from Causeway Street. Ramps, therefore, are especially objectionable on account of the valuable space they would occupy in the main entrance of the building. The stairway wells or openings are only 14 feet long, however, and fit in much better to the present layout of the station. The stairways shown on the plans are located in the only spaces available, or in locations that would meet at all with the approval of the railroad officials. Any other location would require extensive alterations of the building and its foundations.

In locating the passageways under the streets, it is found impossible to build them all on straight lines on account of the massive foundations of the Elevated structure and the station building. Even as located, the construction of the passageways will require extensive changes of pipes, conduits and sewers where they pass under Causeway Street. The accompanying plans show the various pipes. etc., that are to be relocated or rebuilt.

The structure itself must be built on pile foundations, and all work must be done under heavy traffic conditions, and much of it during the night time.

The following estimates of cost are for the different studies:

STUDY.	Construction Cost.	Maintenance Cost per Year.
A . . . . .	\$120,000	\$2,000
B . . . . .	115,000	2,000
C . . . . .	150,000	2,000

The estimated capacity of each of the above passageways is 7,000 pedestrians per hour, and the three passageways would have a total capacity of twice the present maximum number of people now crossing the street at any one hour.

Respectfully submitted,

ERNEST R. SPRINGER,  
*Chief Engineer.*

## THE COMMONWEALTH OF MASSACHUSETTS.

In the Year One Thousand Nine Hundred and Thirty.

AN ACT TO PROVIDE FOR THE CONSTRUCTION OF AN UNDERPASS OR UNDERPASSES FOR FOOT TRAFFIC UNDER CAUSEWAY STREET IN BOSTON NEAR THE STATION OF THE BOSTON AND MAINE RAILROAD, COMMONLY CALLED THE NORTH STATION.

*Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:*

SECTION 1. The city of Boston, acting through its transit department, with the written approval of the mayor of said city, is hereby authorized to construct an underpass or underpasses under Causeway street in the city of Boston near the station of the Boston and Maine railroad, commonly called the North Station, said underpass or underpasses to be for the use of foot traffic exclusively.

SECTION 2. The transit department of the city of Boston, with the written approval of the mayor of said city, may for the purposes of this act take and use without compensation public ways and public land, and may also acquire on behalf of the city of Boston by purchase or otherwise any land or buildings, whether said land or buildings have been acquired for or are now used for railroad or other purposes, and may take any property and rights of any kind deemed by it essential to the construction of said underpass or underpasses. The takings may be made of a fee or easement, and may be confined to a portion or section of such parcel of land or buildings or right in the same fixed by planes of division, or otherwise, below, above or at the surface of the soil, and in such case no taking need be made of upper or lower portions or other parts or sections thereof, except of such easements therein, if any, as the department may deem necessary. Any person sustaining damage by reason of property or rights in property taken or injured by the department under authority of this act, except public lands and ways, which may be taken and used without compensation as hereinbefore provided, shall be entitled to recover the same from the city of Boston under chapter seventy-nine of the General Laws of the year nineteen hundred and twenty-one, if the taking is made under said



provisions, and if made under any alternative method of taking by eminent domain, under the provisions of law relating to said alternative method of taking. Members of the transit department shall not be liable personally for any such damage.

SECTION 3. For the purpose of meeting the cost of the construction of the underpass or underpasses provided for in this act, and all land damages and expenses of the department, such proportion of the salaries of the department as may in its opinion be properly chargeable thereto, and all interest accruing prior to the use of the underpass or underpasses on debt incurred for the foregoing, the treasurer of the city of Boston may from time to time, on request of the department, with the approval of the mayor of the city of Boston, and without any other authority than that contained in this act, issue and sell at public or private sale the bonds of the city, registered or with interest coupons attached, as may be deemed best, to an amount not exceeding                    dollars. Such bonds shall be designated on their face, Causeway Street Underpass Bonds, City of Boston, Act of 1930; shall be for such terms not exceeding                    years as the mayor and treasurer of said city of Boston may determine; and shall bear such interest payable semiannually as the mayor and treasurer of the city of Boston may determine. Such bonds may be called, retired and canceled by the city of Boston on any date upon which interest is payable upon said bonds after                    years from their respective dates, by payment by the city of the amount of the face of said bonds with any accumulated unpaid interest, and the bonds shall contain a statement to such effect. The proceeds of such bonds shall be used only to meet the cost of the underpass or underpasses as hereinbefore defined. The debt incurred from time to time under the provisions of this act shall not be included in determining the limit of indebtedness of the city as established by law.

SECTION 4. The work of maintenance and repair of said underpass or underpasses shall be in the charge of the public works department of the city of Boston in the same manner as public highways. The city of Boston shall not be liable in damages for injuries to person or damage to property on account of the use of said underpass or underpasses.

SECTION 5. This act shall take effect upon its passage.

## SINKING FUNDS.

The following is the condition of the debt and of the sinking funds for the various divisions of the work of the department at the date of this report, as stated by the City Treasurer.

## SUBWAY (INCLUDING ALTERATIONS).

(Debt, \$4,416,000, outside debt limit.)

Amount of fund January 1, 1929 . . . . .	\$3,276,156 47
Received:	
Interest on bank deposits January 1, 1929	
to date . . . . .	\$2,246 32
Interest on investments January 1, 1929	
to date . . . . .	127,247 50
Revenue, etc., January 1, 1929 to date . . . . .	11,660 00
	<hr/>
	141,153 82
	<hr/>
	<u>\$3,417,310 29</u>

## CHARLESTOWN BRIDGE, No. 1.

(Debt, \$750,000, inside debt limit.)

Amount of fund January 1, 1929 . . . . .	\$535,464 77
Received:	
Interest on bank deposits January 1, 1929	
to date . . . . .	\$1,266 18
Interest on investments January 1, 1929	
to date . . . . .	20,727 50
Appropriation for debt . . . . .	2,941 00
Revenue, etc., January 1, 1929 to date . . . . .	15,090 29
	<hr/>
	40,024 97
	<hr/>
	\$575,489 74

## Paid:

Interest on investments purchased January 1, 1929	
to date . . . . .	65 62
	<hr/>
	<u>\$575,424 12</u>

## CHARLESTOWN BRIDGE, No. 2.

(Debt, \$665,000, outside debt limit.)

Amount of fund January 1, 1929 . . . . .	\$602,656 48
Received:	
Interest on bank deposits January 1, 1929	
to date . . . . .	\$1,343 90
Interest on investments January 1, 1929	
to date . . . . .	23,537 50
	<hr/>
	24,881 40
	<hr/>
	<u>\$627,537 88</u>

## EAST BOSTON TUNNEL.

*(Debt, \$3,334,000, outside debt limit.)*

Amount of fund January 1, 1929 . . . . .	\$1,893,401 39
Received:	
Interest on bank deposits January 1, 1929	
to date . . . . .	\$1,471 83
Interest on investments January 1, 1929	
to date . . . . .	76,860 00
Appreciation of investments January 1,	
1929 to date . . . . .	10 50
Revenue, etc., January 1, 1929 to date . . . . .	5,912 00
	<hr/>
	84,254 33
	<hr/>
	\$1,977,655 72
Paid:	
Interest on investments purchased Jan-	
uary 1, 1929 to date . . . . .	281 25
	<hr/>
	\$1,977,374 47
	<hr/>

## BOSTON TUNNEL AND SUBWAY.

*(Debt, \$8,376,700, outside debt limit.)*

Amount of fund January 1, 1929 . . . . .	\$3,451,174 15
Received:	
Interest on bank deposits January 1, 1929	
to date . . . . .	\$2,269 59
Interest on investments January 1, 1929	
to date . . . . .	139,527 26
Appreciation of investments January 1,	
1929 to date . . . . .	151 25
Revenue, etc., January 1, 1929 to date . . . . .	63,907 00
	<hr/>
	205,855 10
	<hr/>
	\$3,657,029 25
Paid:	
Interest on investments purchased Jan-	
uary 1, 1929 to date . . . . .	234 38
	<hr/>
	\$3,656,794 87
	<hr/>

## RAPID TRANSIT-CAMBRIDGE CONNECTION.

*(Debt, \$1,646,000, outside debt limit.)*

Amount of fund January 1, 1929 . . . . .	\$389,956 76
Received:	
Interest on bank deposits January 1, 1929	
to date . . . . .	\$601 60
Interest on investments January 1, 1929	
to date . . . . .	14,232 50
Revenue, etc., January 1, 1929 to date . . . . .	15,139 00
	<hr/>
	29,973 10
	<hr/>
Carried forward . . . . .	\$419,929 86

<i>Brought forward</i> . . . . .		\$419,929 86
Paid:		
Interest on investments purchased January 1, 1929 to date . . . . .	\$125 35	
Premium on investments purchased January 1, 1929 to date . . . . .	50 00	
	<hr/>	175 35
		<u>\$419,754 51</u>

## BOYLSTON STREET SUBWAY.

*(Debt, \$5,396,000, outside debt limit.)*

Amount of fund January 1, 1929 . . . . .		\$115,803 97
Received:		
Interest on bank deposits January 1, 1929 to date . . . . .	\$850 63	
Interest on investments January 1, 1929 to date . . . . .	3,882 50	
Revenue, etc., January 1, 1929 to date . . . . .	15,973 43	
	<hr/>	20,706 56
		<u>\$136,510 53</u>

## EAST BOSTON TUNNEL EXTENSION.

*(Debt, \$2,500,000, outside debt limit.)*

Amount of fund January 1, 1929 . . . . .		\$229,204 93
Received:		
Interest on bank deposits January 1, 1929 to date . . . . .	\$561 02	
Interest on investments January 1, 1929 to date . . . . .	9,066 00	
Revenue, etc., January 1, 1929 to date . . . . .	5,052 28	
	<hr/>	14,679 30
		<u>\$243,884 23</u>

## DORCHESTER TUNNEL.

*(Debt, \$12,115,000, outside debt limit.)*

Amount of fund January 1, 1929 . . . . .		\$537,441 32
Received:		
Interest on bank deposits January 1, 1929 to date . . . . .	\$1,257 92	
Interest on investments January 1, 1929 to date . . . . .	19,992 50	
Revenue, etc., January 1, 1929 to date . . . . .	80,537 92	
	<hr/>	101,788 34
		<u>\$639,229 66</u>

## EAST BOSTON TUNNEL ALTERATIONS.

*(Debt, \$3,900,000, outside debt limit.)*

Amount of fund January 1, 1929 . . . . .		\$67,485 18
<i>Carried forward</i> . . . . .		<u>\$67,485 18</u>

## TRANSIT DEPARTMENT.

21

<i>Brought forward</i> . . . . .		\$67,485 18
Received:		
Interest on bank deposits January 1, 1929		
to date . . . . .	\$511 18	
Interest on investments January 1, 1929		
to date . . . . .	1,932 50	
Revenue, etc., January 1, 1929 to date . . . . .	9,017 61	
		<u>11,461 29</u>
		<u>\$78,946 47</u>

## DORCHESTER RAPID TRANSIT.

*(Debt, \$10,450,000, outside debt limit.)*

(No fund.)

## ARLINGTON STATION.

*(Debt, \$1,237,000, outside debt limit.)*

Amount of fund January 1, 1929 . . . . .		\$10,291 54
Received:		
Interest on bank deposits January 1, 1929		
to date . . . . .	\$86 91	
Interest on investments January 1, 1929		
to date . . . . .	320 00	
		<u>406 91</u>
		<u>\$10,698 45</u>

## HYDE PARK STREET RAILWAY.

*(Debt, \$322,000, outside debt limit.)*

Amount of fund January 1, 1929 . . . . .		\$44,211 72
Received:		
Interest on bank deposits January 1, 1929		
to date . . . . .	\$720 28	
Interest on investments January 1, 1929		
to date . . . . .	1,020 00	
Appropriation for debt January 1, 1929		
to date . . . . .	8,359 00	
		<u>10,099 28</u>
		<u>\$54,311 00</u>

## TREMONT STREET SUBWAY ALTERATIONS — ACTS 1924 — CHAPTER 120.

*(Debt, \$50,000, outside debt limit.)*

(No fund.)

## EAST BOSTON TUNNEL ALTERATIONS — ACTS 1924 — CHAPTER 120.

*(Debt, \$20,000, outside debt limit.)*

(No fund.)

## TRAFFIC TUNNEL.

*(Debt, \$50,000, outside debt limit.)*

(No fund.)

# RENTAL BILLS RENDERED TO THE BOSTON ELEVATED RAILWAY COMPANY.

The following is a statement of the bills rendered for rental of the various tunnels and subways:

## TREMONT STREET SUBWAY.

March 31, 1929:

Net cost of subway . . . . .	\$4,145,818 00	
Rental for one quarter . . . . .		\$46,640 45
Alterations: net cost . . . . .	242,673 93	
Rental for one quarter . . . . .		2,730 08

June 30, 1929:

Net cost of subway . . . . .	4,145,912 59	
Rental for one quarter . . . . .		46,641 52
Alterations: net cost . . . . .	242,673 93	
Rental for one quarter . . . . .		2,730 08

September 30, 1929:

Net cost of subway . . . . .	4,147,180 85	
Rental for one quarter . . . . .		46,655 79
Alterations: net cost . . . . .	242,673 93	
Rental for one quarter . . . . .		2,730 08

December 31, 1929:

Net cost of subway . . . . .	4,149,709 12	
Rental for one quarter . . . . .		46,684 23
Alterations: net cost . . . . .	242,673 93	
Rental for one quarter . . . . .		2,730 09

Total . . . \$197,542 32

## WASHINGTON STREET TUNNEL.

March 31, 1929:

Net cost of tunnel . . . . .	\$7,945,505 76	
Rental for one quarter . . . . .		\$89,386 94

June 30, 1929:

Net cost of tunnel . . . . .	7,945,708 46	
Rental for one quarter . . . . .		89,389 22

September 30, 1929:

Net cost of tunnel . . . . .	7,946,022 27	
Rental for one quarter . . . . .		89,392 75

December 31, 1929:

Net cost of tunnel . . . . .	7,946,050 04	
Rental for one quarter . . . . .		89,393 06

Total . . . \$357,561 97

## CAMBRIDGE CONNECTION.

March 31, 1929:

Net cost of connection . . . . .	\$1,651,036 86	
Rental for one quarter . . . . .		\$20,122 01

June 30, 1929:

Net cost of connection . . . . .	1,651,061 40	
Rental for one quarter . . . . .		20,122 31

September 30, 1929:

Net cost of connection . . . . .	1,651,511 87	
Rental for one quarter . . . . .		20,127 80

December 31, 1929:

Net cost of connection . . . . .	1,652,035 02	
Rental for one quarter . . . . .		20,134 18

Total . . . \$80,506 30

## BOYLSTON STREET SUBWAY.

March 31, 1929:		
Net cost of subway . . . . .	\$5,251,867 35	
Rental for one quarter . . . . .		\$59,083 51
June 30, 1929:		
Net cost of subway . . . . .	5,251,959 91	
Rental for one quarter . . . . .		59,084 55
September 30, 1929:		
Net cost of subway . . . . .	5,252,010 35	
Rental for one quarter . . . . .		59,085 12
December 31, 1929:		
Net cost of subway . . . . .	5,252,389 85	
Rental for one quarter . . . . .		59,089 39
Total . . . . .	<u>\$236,342 57</u>	

## EAST BOSTON TUNNEL EXTENSION.

March 31, 1929:		
Net cost of extension . . . . .	\$2,334,494 83	
Rental for one quarter . . . . .		\$26,263 07
June 30, 1929:		
Net cost of extension . . . . .	2,334,494 83	
Rental for one quarter . . . . .		26,263 07
September 30, 1929:		
Net cost of extension . . . . .	2,339,169 18	
Rental for one quarter . . . . .		26,315 65
December 31, 1929:		
Net cost of extension . . . . .	2,342,697 34	
Rental for one quarter . . . . .		26,355 34
Total . . . . .	<u>\$105,197 13</u>	

## DORCHESTER TUNNEL.

March 31, 1929:		
Net cost of tunnel . . . . .	\$12,147,252 32	
Rental for one quarter . . . . .		\$136,656 59
June 30, 1929:		
Net cost of tunnel . . . . .	12,151,321 16	
Rental for one quarter . . . . .		136,702 36
September 30, 1929:		
Net cost of tunnel . . . . .	12,156,989 25	
Rental for one quarter . . . . .		136,766 13
December 31, 1929:		
Net cost of tunnel . . . . .	12,159,601 32	
Rental for one quarter . . . . .		136,795 51
Total . . . . .	<u>\$546,920 59</u>	

## ARLINGTON STATION.

March 31, 1929:		
Net cost of station . . . . .	\$1,219,418 72	
Rental for one quarter . . . . .		\$13,718 46
June 30, 1929:		
Net cost of station . . . . .	1,219,418 72	
Rental for one quarter . . . . .		13,718 46
September 30, 1929:		
Net cost of station . . . . .	1,219,959 78	
Rental for one quarter . . . . .		13,724 55
December 31, 1929:		
Net cost of station . . . . .	1,219,956 45	
Rental for one quarter . . . . .		13,724 51
Total . . . . .	<u>\$54,885 98</u>	

## EAST BOSTON TUNNEL.

March 31, 1929:		
Net cost of tunnel . . . . .	\$3,396,343 75	
Rental for one quarter . . . . .		\$38,208 87
June 30, 1929:		
Net cost of tunnel . . . . .	3,396,574 91	
Rental for one quarter . . . . .		38,211 47
September 30, 1929:		
Net cost of tunnel . . . . .	3,396,769 63	
Rental for one quarter . . . . .		38,213 66
December 31, 1929:		
Net cost of tunnel . . . . .	3,398,749 68	
Rental for one quarter . . . . .		38,235 93
Total . . . . .		<u>\$152,869 93</u>

## HYDE PARK STREET RAILWAY.

March 31, 1929:		
Net cost of premises . . . . .	\$231,099 45	
Rental for one quarter . . . . .		\$2,599 87
June 30, 1929:		
Net cost of premises . . . . .	231,099 45	
Rental for one quarter . . . . .		2,599 87
September 30, 1929:		
Net cost of premises . . . . .	231,099 45	
Rental for one quarter . . . . .		2,599 87
December 31, 1929:		
Net cost of premises . . . . .	231,099 45	
Rental for one quarter . . . . .		2,599 87
Total . . . . .		<u>\$10,399 48</u>

## EAST BOSTON TUNNEL ALTERATIONS.

March 31, 1929:		
Net cost of premises . . . . .	\$3,773,997 99	
Rental for one quarter . . . . .		\$42,457 48
June 30, 1929:		
Net cost of premises . . . . .	3,774,542 15	
Rental for one quarter . . . . .		42,463 60
September 30, 1929:		
Net cost of premises . . . . .	3,774,776 12	
Rental for one quarter . . . . .		42,466 23
December 31, 1929:		
Net cost of premises . . . . .	3,774,924 26	
Rental for one quarter . . . . .		42,467 90
Total . . . . .		<u>\$169,855 21</u>

## DORCHESTER RAPID TRANSIT.

March 31, 1929:		
Value of premises . . . . .	\$8,000,000 00	
Rental for one quarter . . . . .		\$90,000 00
June 30, 1929:		
Value of premises . . . . .	8,000,000 00	
Rental for one quarter . . . . .		90,000 00
September 30, 1929:		
Value of premises . . . . .	8,000,000 00	
Rental for one quarter . . . . .		90,000 00
December 31, 1929:		
Value of premises . . . . .	8,000,000 00	
Rental for one quarter . . . . .		90,000 00
Total . . . . .		<u>\$360,000 00</u>



## TOTALS.

Tremont Street Subway . . . . .	\$197,542 32
Washington Street Tunnel . . . . .	357,561 97
Cambridge Connection . . . . .	80,506 30
Boylston Street Subway . . . . .	236,342 57
East Boston Tunnel Extension . . . . .	105,197 13
Dorchester Tunnel . . . . .	546,920 59
Arlington Station . . . . .	54,885 98
East Boston Tunnel . . . . .	152,869 93
Hyde Park Street Railway . . . . .	10,399 48
East Boston Tunnel Alterations . . . . .	169,855 21
Dorchester Rapid Transit . . . . .	360,000 00
	<u>\$2,272,081 48</u>

## STATEMENT OF EXPENSES.

The following is a classified statement of the expenses of the department for the year ending December 31, 1929.

## EAST BOSTON TUNNEL.

## SECTION B.

## Construction Expenses:

Labor . . . . .	<u>\$714 31</u>
-----------------	-----------------

## BOSTON TUNNEL AND SUBWAY.

## Engineering Expenses:

Professional Advice . . . . .	\$200 00
-------------------------------	----------

## SECTION 6.

## Construction Expenses:

Escalators . . . . .	\$285 47
Labor . . . . .	28 34
	<u>313 81</u>

## SECTION 8.

## Engineering Expenses:

Skilled Service . . . . .	\$6 29
Stationery — Supplies . . . . .	2 70
	<u>\$8 99</u>

## Construction Expenses:

Construction . . . . .	\$593 09
Field Supplies . . . . .	93 42
Labor . . . . .	566 50
Tools . . . . .	39 10
	<u>1,292 11</u>
	1,301 10

## SECTION 9.

## Engineering Expenses:

Skilled Service . . . . .	27 77
	<u>\$1,842 68</u>

## CAMBRIDGE CONNECTION.

## SECTION 2.

## Engineering Expenses:

Skilled Service . . . . .	\$48 91
Stationery — Supplies . . . . .	3 60
	<u>\$52 51</u>

Carried forward . . . . .	\$52 51
---------------------------	---------

<i>Brought forward</i> . . . . .		\$52 51	
Construction Expenses:			
Construction . . . . .	\$1 00		
Escalators . . . . .	398 10		
Field Supplies . . . . .	20		
Labor . . . . .	747 10		
		<u>1,146 40</u>	
			<u>\$1,198 91</u>

## DORCHESTER TUNNEL.

## SECTION A.

Engineering Expenses:			
Skilled Service . . . . .	\$4 97		
Construction Expenses:			
Construction . . . . .	\$6 00		
Labor . . . . .	237 84		
Tools . . . . .	6 00		
		<u>249 84</u>	
			\$254 81

## SECTION B.

Construction Expenses:			
Escalators . . . . .		577 97	

## SECTION D.

Engineering Expenses:			
Skilled Service . . . . .	\$358 93		
Construction Expenses:			
Construction . . . . .	\$5 45		
Escalators . . . . .	578 96		
Labor . . . . .	839 66		
Tools . . . . .	8 10		
		<u>1,432 17</u>	
			1,791 10

## SECTION F.

Engineering Expenses:			
Stationery — Supplies . . . . .		1 50	

## SECTION H.

Engineering Expenses:			
Stationery Supplies . . . . .	\$4 10		
Construction Expenses:			
Construction . . . . .	\$24 53		
Labor . . . . .	810 02		
Tools . . . . .	9 60		
		<u>844 15</u>	
			848 25

## SECTION J.

Engineering Expenses:			
Stationery — Supplies . . . . .	\$12 91		
Construction Expenses:			
Construction . . . . .	\$26 28		
Escalators . . . . .	287 48		
Field Supplies . . . . .	1 30		
Labor . . . . .	5,264 24		
Property Dam-			
ages — Takings, . . . . .	1,419 20		
Tools . . . . .	115 84		
		<u>7,114 34</u>	
			<u>7,127 25</u>

*Carried forward* . . . . . \$10,600 88

Brought forward . . . . . \$10,600 88

## SECTION K.

## Engineering Expenses:

Professional Ad-		
vice . . . . .	\$166	67
Skilled Service . . . . .	1,354	81
Stationery — Sup-		
plies . . . . .	17	99
Stenographers . . . . .	790	56
		<hr/>
	\$2,330	03

## Construction Expenses:

Construction . . . . .	\$64	78
Field Supplies . . . . .	8	10
Labor . . . . .	2,251	62

Property Dam-		
ages — Takings,	40	04
Tools . . . . .	203	66
		<hr/>
	2,568	20

---

4,898 23

---

\$15,499 11

## BOYLSTON STREET SUBWAY.

## SECTION 1.

## Engineering Expenses:

Skilled Service . . . . .	\$79	26
Stationery — Supplies . . . . .		72
		<hr/>
	\$79	98

## SECTION 2.

## Engineering Expenses:

Skilled Service . . . . .	\$78	52
Stationery —		
Supplies . . . . .	9	20
		<hr/>
	\$87	72

## Construction Expenses:

Construction . . . . .	\$383	98
Labor . . . . .	22	00
Tools . . . . .	28	80
		<hr/>
	434	78

---

522 50

---

\$602 48

## ARLINGTON STATION.

## Engineering Expenses:

Stationery — Supplies . . . . .	\$2	20
---------------------------------	-----	----

## Construction Expenses:

Labor . . . . .	\$541	06
Construction . . . . .	Cr. 10	80
		<hr/>
	530	26

---



---

\$532 46

## EAST BOSTON TUNNEL ALTERATIONS.

Engineering Expenses:			
Skilled Service . . . .	\$189	76	
Stationery — Supplies . . . .	2	20	
			\$191 96
Construction Expenses:			
Labor . . . .	\$774	10	
Construction . . . . Cr. \$3 45			
Field Supplies . . . . Cr. 11 40			
	14	85	
			759 25
			<u>\$951 21</u>

## HYDE PARK STREET RAILWAY.

Construction Expenses:	
Property Damages — Takings . . . . .	Cr. <u>\$4,450 00</u>

## TREMONT STREET SUBWAY ALTERATIONS — ACTS 1924.

## Park Street Station (North Platform):

Construction Expenses:	
Labor . . . .	\$412 88

## Park Street Station (Changing Columns):

Engineering Expenses:	
Inspection . . . .	\$3 51
Skilled Service, . . . .	1,256 29
Stationery —	
Supplies . . . .	80
	<u>\$1,260 60</u>
Construction Expenses:	
Construction . . . .	\$952 59
Field Supplies, . . . .	47 09
Labor . . . .	1,892 86
Light — Power . . . .	6 60
Tools . . . .	122 96
	<u>3,002 10</u>

4,262 70

## Scollay Station:

Construction Expenses:	
Labor . . . . .	67 60
	<u>\$4,743 18</u>

## EAST BOSTON TUNNEL ALTERATIONS — ACTS 1924.

## Atlantic Avenue Station:

Engineering Expenses:	
Stationery — Supplies . . . . .	\$2 25

## Construction Expenses:

Construction . . . .	\$42 24
Field Supplies . . . .	4 24
Labor . . . .	1,762 47
Tools . . . .	43 22
	<u>1,852 17</u>

\$1,854 42

## EAST BOSTON TUNNEL EXTENSION.

## SECTION G.

## Construction Expenses:

Escalators . . . . .	\$8,202 51
----------------------	------------

## SECTION H.

## Engineering Expenses:

Skilled Service . . . . .	\$5 37
---------------------------	--------

## Construction Expenses:

Labor . . . . .	25 42
-----------------	-------

30 79
-------

<u>\$8,233 30</u>
-------------------

## DORCHESTER RAPID TRANSIT.

## General Expenses:

Clerks . . . . .	\$6,093 22
Commissioners . . . . .	16,921 43
Furniture . . . . .	4 00
Lighting . . . . .	398 09
Printing . . . . .	1,431 45
Rental . . . . .	6,576 37
Repairs . . . . .	16 25
Stationery — Sup- plies . . . . .	480 39
Stenographer — Conveyancer . . . . .	2,720 01
Telephone — Telegraph . . . . .	1,996 32

\$36,637 53
-------------

Interest . . . . .	58,750 00
--------------------	-----------

\$95,387 53
-------------

## Engineering Expenses:

Chief Engineer . . . . .	\$7,454 79
Clerks . . . . .	4,456 02
Instruments . . . . .	49 40
Lighting . . . . .	404 66
Printing . . . . .	243 35
Professional Ad- vice . . . . .	2,458 33
Rental . . . . .	5,155 58
Repairs . . . . .	9 25
Skilled Service . . . . .	12,908 63
Stationery — Sup- plies . . . . .	1,189 37
Stenographer . . . . .	2,359 94
Telephone — Telegraph . . . . .	613 12

\$37,302 44
-------------

## Miscellaneous Expenses:

Autos . . . . .	\$1,636 63
Equipment — Inspection . . . . .	763 77
Labor . . . . .	13,206 06
Material . . . . .	16,078 01
Skilled Service . . . . .	231 59
Rental — Yard . . . . .	6,050 00

<i>Carried forward,</i>	\$37,966 06	\$37,302 44	\$95,387 53
-------------------------	-------------	-------------	-------------

Brought forward,	\$37,966 06	\$37,302 44	\$95,387 53
Acquisition of Shawmut Branch .	Cr. 27,095 91		
		10,870 15	
		<u>\$48,172 59</u>	

Transferred to Sections, 1, 2, 3, 4, 5A, 5B, 5C. Formerly carried in General Accounts until all location to proper sections was agreed upon.			
Acquisition of Shawmut Branch .	\$914,467 61		
Equipment — Inspection .	4,945 29		
Labor .	421,835 57		
Material .	905,226 40		
Skilled Service .	18,383 01		
Field Supplies .	2,429 81		
Labor .	5,182 26		
Rental — Yard .	22,620 81		
Tools .	13 88		
	<u>*2,295,104 64</u>		
			*2,246,932 05

## SECTION 1.

Stations:			
Columbia .	\$546 92		
Savin .	542 09		
	<u>\$1,089 01</u>		
Field Offices:			
Savin .		326 48	
Bridges:			
Columbia Station Overpass .	\$24,440 15		
Freeport Street .	24 43		
Savin .	12 08		
	<u>24,476 66</u>		

Miscellaneous Expenses:			
Clerk .	\$322 84		
Equipment — Material .	759,143 90		
Field Supplies .	773 04		
Labor .	1,899 51		
Paving .	904 49		
Professional Advice .	1,901 00		
Property Damages — Takings .	851 54		
Rental — Yard .	6,589 92		
Skilled Service .	3,871 22		
	<u>Carried forward, \$776,257 46</u>	<u>\$25,892 15</u>	<u>*\$2,151,544 52</u>

\* Credit.

# TRANSIT DEPARTMENT.

31

*Brought forward*, \$776,257 46    \$25,892 15    \*\$2,151,544 52  
 Stationery — Sup-  
   plies . . . . . 8 58  
 Tools . . . . . 3 97

                                  \$776,270 01  
 Construction . . . . *Cr.* 889 13  
                                   775,380 88  
   801,273 03

## SECTION 2.

Stations:  
   Fields Corner . . . . \$569 18  
   Fields Corner En-  
     closed Area . . . . 9,308 50  
                                   \$9,877 68

Bridges:  
   Geneva Avenue Relocation  
     Abutment . . . . . 1,899 22

Miscellaneous Expenses:  
   Acquisition of  
     Shawmut  
       Branch . . . . \$107,907 18  
   Autos . . . . . 19 28  
   Construction . . . . 1,727 66  
   Equipment —  
     Material . . . . 10,667 58  
   Field Supplies . . . . 434 94  
   Labor . . . . . 1,119 50  
   Rental — Yard . . . . 4,124 45  
   Skilled Service . . . . 410 92  
   Tools . . . . . 69  
                                   \$126,412 20  
   Clerk . . . . . *Cr.* 19 28  
   Steel — Labor . . . . *Cr.* 191 88  
   Steel — Material *Cr.* 1,726 57  
                                   124,474 47

136,251 37

## SECTION 3.

C. & R. Construction Co. (Con-  
   tract 805) . . . . . \$60,376 25

Station:  
   Shawmut . . . . . 4,719 93

Miscellaneous Expenses:  
   Acquisition—  
     Shawmut  
       Branch . . . . \$198,439 47  
   Equipment—  
     Material . . . . 420,566 50  
   Field Supplies . . . . 444 32  
   Labor . . . . . 2,716 78  
   Professional Ad-  
     vice . . . . . 100 00  
   Property Dam-  
     ages—Takings, . . . . 1,250 00  
   Rental — Yard . . . . 4,170 54  
   Skilled Service . . . . 1,804 96  
   Stationery—Sup-  
     plies . . . . . 6 95

*Carried forward*, \$629,499 52    \$65,096 18    \*\$1,214,020 12

\* Credit.

Brought forward,	\$629,499 52	\$65,096 18	*\$1,214,020 12
Tools . . . . .	114 55		
Water Pipes . . . . .	298 07		

	\$629,912 14		
Construction . . . . .	Cr. 264 21		
Steel — Labor . . . . .	Cr. 617 34		
		629,030 59	
			694,126 77

## SECTION 4.

## Stations and Buildings:

Ashmont . . . . .	\$10,441 26		
Ashmont Sub-station . . . . .	897 12		
Ashmont Signal Tower . . . . .	244 85		
Cedar Grove . . . . .	10,724 08		
Yardmen's Building . . . . .	1,202 73		
		\$23,510 04	

## Bridges:

Beale Street Passageway . . . . .	\$447 34		
Codman Street . . . . .	11 80		
		459 14	

## Miscellaneous Expenses:

Acquisition — Shawmut Branch . . . . .	\$160,946 30		
Advertising . . . . .	6 12		
Clerks . . . . .	448 87		
Construction . . . . .	676 31		
Equipment — Material . . . . .	149,428 08		
Field Supplies . . . . .	520 19		
Fuel . . . . .	194 10		
Labor . . . . .	6,874 86		
Professional Advice . . . . .	200 00		
Property Damages — Takings, . . . . .	2,027 00		
Rental — Yard . . . . .	4,324 00		
Skilled Service . . . . .	2,463 79		
Tools . . . . .	55 35		
Water Pipes . . . . .	1,401 16		

	\$329,566 13		
Stationery — Supplies . . . . .	Cr. 20 75		
Steel — Labor . . . . .	Cr. 3,459 11		
C. & R. Construction Co. (Contract 872) . . . . .	Cr. 43,036 34		
		283,049 93	
			307,019 11

## SECTION 5A.

M. F. Gaddis (Contract 920) . . . . .	\$99,692 72
---------------------------------------	-------------

## Bridges:

Milton . . . . .	\$29,655 94		
Carried forward,	\$29,655 94	\$99,692 72	*\$212,874 24

\* Credit.



<i>Brought forward,</i>	\$29,655 94	\$99,692 72	\$212,874 24 *
Shawmut Junction Underpass . . .	253 17		
	<u>\$29,909 11</u>		
Crest Avenue . . .	Cr. 3,394 63		
		26,514 48	
Field Office . . .		40 31	
Miscellaneous Expenses:			
Acquisition—Shawmut Branch . . .	\$140,828 01		
Advertising . . .	9 71		
Autos . . .	620 53		
Clerks . . .	1,025 66		
Equipment—Material . . .	114,409 06		
Field Supplies . . .	844 24		
Fuel . . .	576 58		
Inspection . . .	385 58		
Instruments . . .	5 00		
Labor . . .	26,487 49		
Lighting . . .	363 09		
Property Damages — Takings . . .	25,597 20		
Rental — Yard . . .	1,705 09		
Skilled Service . . .	10,108 15		
Stationery—Supplies . . .	189 11		
Tools . . .	1,351 88		
Track Changes . . .	20,907 46		
Water Pipes . . .	220 51		
	<u>\$345,634 35</u>		
Construction . . .	Cr. 11,754 26		
Steel — Labor . . .	Cr. 296 22		
Steel—Material, Cr. 11,044 44			
		322,539 43	
			448,786 94

## SECTION 5B.

William J. Sullivan (Contract 935) . . .	\$216,980 28		
Stations:			
Central Avenue . . .	\$705 33		
Milton . . .	5,477 76		
		6,183 109	
Field Office:			
Milton . . .		577 26	
Bridges:			
Adams Street . . .	\$17,445 91		
Pine Tree Brook, . . .	551 26		
		17,997 17	

<i>Carried forward,</i>	\$241,737 80	\$235,912 70
-------------------------	--------------	--------------

\* Credit.

<i>Brought forward,</i>	\$241,737 80	\$235,912 70
Miscellaneous Expenses:		
Acquisition—		
<i>S h a w m u t</i>		
Branch . . .	\$97,848 03	
Advertising . . .	182 41	
Autos . . . . .	1,044 30	
Clerks . . . . .	1,290 49	
Construction . . .	3,837 65	
Equipment—		
Material . . . . .	68,860 60	
Field Supplies . . .	645 81	
Fuel . . . . .	111 99	
Inspection . . . . .	34 28	
Instruments . . . .	20 88	
Labor . . . . .	36,748 91	
Lighting . . . . .	38 08	
Printing . . . . .	304 75	
Professional Advice . . . . .	200 00	
Property		
Damages—		
Takings . . . . .	12,173 50	
Rental—Yard . . .	1,336 41	
Skilled Service . .	23,422 55	
Stationery—		
Supplies . . . . .	562 34	
Steel—Labor . . . .	558 29	
Track Changes . . .	17,406 48	
Tools . . . . .	378 58	
Water Pipes . . . .	7,962 10	
	<hr/>	
	274,968 43	516,706 23

## SECTION 5C.

Peerless Construction Co. (Contract 937) . . . . .	\$65,386 18		
Stations:			
Mattapan . . . . .	\$29,140 16		
Valley Road . . . . .	2,380 81		
	<hr/>	31,520 97	
Field Office:			
Mattapan . . . . .		939 21	
Bridges:			
Mattapan . . . . .		5,091 27	
Miscellaneous Expenses:			
Acquisition—			
<i>S h a w m u t</i>			
Branch . . . . .	\$208,498 62		
Advertising . . .	205 16		
Autos . . . . .	563 62		
Clerks . . . . .	1,059 16		
Construction . .	38,481 71		
Equipment—			
Material . . . . .	150,040 25		
Field Supplies . . .	1,454 86		
Fuel . . . . .	285 65		
Inspection . . . .	5 91		
	<hr/>		
<i>Carried forward</i> . . .	\$400,594 94	\$102,937 63	\$752,618 93

## TRANSIT DEPARTMENT.

35

Brought forward,	\$400,594 94	\$102,937 63	\$752,618 93
Instruments . . . .	68 45		
Labor . . . .	22,953 96		
Lighting . . . .	234 45		
Paving . . . .	1,890 56		
Printing . . . .	178 50		
Professional Advice . . . .	212 00		
Property Dam-ages — Tak-ings . . . .	39,915 17		
Rental — Yard . . . .	691 24		
Skilled Service . . . .	27,099 99		
Stationery . . . .			
Supplies . . . .	628 69		
Steel — Labor . . . .	23 39		
Tools . . . .	698 50		
Track Changes . . . .	1,410 14		
Water Pipes . . . .	5,497 91		
		502,097 89	
			605,035 52
			<u>\$1,357,654 45</u>

## TRAFFIC TUNNEL.

General Expenses:			
Clerks — Stenographers . . . .	\$1,027 43		
Commissioners . . . .	4,000 02		
Conveyancer . . . .	569 25		
Office — Furniture . . . .	7 45		
Lighting . . . .	24 53		
Printing . . . .	31 90		
Rental . . . .	486 12		
Repairs . . . .	3 50		
Stationery — Sup-plies . . . .	166 82		
Telephone — Tele-graph . . . .	391 42		
			\$6,708 44
Engineering Expenses:			
Advertising . . . .	\$35 55		
Alterations . . . .	10 88		
Autos . . . .	36 12		
Clerks . . . .	614 44		
Chief Engineer . . . .	1,500 00		
Furniture . . . .	2,000 09		
Instruments . . . .	406 41		
Lighting . . . .	80 80		
Professional Advice . . . .	1,000 00		
Rental . . . .	2,111 10		
Repairs . . . .	11 30		
Skilled Service . . . .	37,155 02		
Stationery — Supplies . . . .	1,882 14		
Stenographers . . . .	354 86		
Telephone — Telegraph . . . .	88 68		
		47,287 39	
			<u>\$53,995 83</u>
Increase:			
East Boston Tunnel . . . .	\$714 31		
Boston Tunnel and Subway . . . .	1,842 68		
Carried forward . . . .	\$2,556 99		

<i>Brought forward</i> . . . . .	\$2,556 99
Cambridge Connection . . . . .	1,198 91
Dorchester Tunnel . . . . .	15,499 11
Boylston Street Subway . . . . .	602 48
Arlington Station . . . . .	532 46
East Boston Tunnel Alterations . . . . .	951 21
Hyde Park Street Railway . . . . .	Cr. 4,450 00
Tremont Street Subway Alterations — Acts of 1924 . . . . .	4,743 18
East Boston Tunnel Alterations — Acts of 1924 . . . . .	1,854 42
East Boston Tunnel Extension . . . . .	8,233 30
Dorchester Rapid Transit . . . . .	1,357,654 45
Traffic Tunnel . . . . .	53,995 83
	<u>\$1,443,372 34</u>

## SUMMARY.

	From beginning of work to Dec. 31, 1928.	Jan. 1, 1929, to Dec. 31, 1929.	Total.
Subway — Subway Com- mission . . . . .	\$14,131 16		\$14,131 16
Part of General Ex- penses . . . . .	117,550 71		117,550 71
Engineering and miscel- laneous . . . . .	407,475 48		407,475 48
Section One . . . . .	239,407 12		239,407 12
Two . . . . .	363,605 50		363,605 50
Three . . . . .	300,639 36		300,639 36
Three and one- half . . . . .	9,355 70		9,355 70
Four . . . . .	472,147 31		472,147 31
Five . . . . .	387,411 49		387,411 49
Six . . . . .	327,541 86		327,541 86
Seven . . . . .	231,504 27		231,504 27
Eight . . . . .	95,902 06		95,902 06
Eight and one- half . . . . .	76,639 47		76,639 47
Nine . . . . .	299,452 07		299,452 07
Ten . . . . .	254,497 88		254,497 88
Eleven . . . . .	270,310 57		270,310 57
Interest . . . . .	258,575 60		258,575 60
	<u>\$4,126,147 61</u>		<u>\$4,126,147 61</u>
Transfer to Alterations, see 11th report . . . . .	4 95		4 95
	<u>\$4,126,142 66</u>		<u>\$4,126,142 66</u>
Alterations — Part of Gen- eral Expenses . . . . .	\$28,945 53		\$28,945 53
Section Three . . . . .	2,568 26		2,568 26
Four . . . . .	163 42		163 42
Five . . . . .	30,233 01		30,233 01
Seven . . . . .	178,516 16		178,516 16
Nine . . . . .	3 00		3 00
Ten . . . . .	534 04		534 04
Interest . . . . .	1,905 56		1,905 56
Transfer from subway, see 11th report . . . . .	4 95		4 95
	<u>\$242,873 93</u>		<u>\$242,873 93</u>

## TRANSIT DEPARTMENT.

37

	From beginning of work to Dec. 31, 1928.	Jan. 1, 1929, to Dec. 31, 1929.	Total
Charlestown Bridge:			
Total . . . . .	<u>\$1,570,197 98</u>		<u>\$1,570,197 98</u>
Investigation of Conges- tion of Traffic, etc. . .	<u>\$3,015 92</u>		<u>\$3,015 92</u>
East Boston Tunnel — Part of General Ex- penses . . . . .	\$161,134 78		\$161,134 78
Engineering and miscel- laneous . . . . .	199,688 73		199,688 73
Section A . . . . .	98,869 09		98,869 09
B . . . . .	1,489,154 76	\$714 31	1,489,869 07
C . . . . .	508,202 77		508,202 77
D . . . . .	246,569 26		246,569 26
E . . . . .	188,307 72		188,307 72
F . . . . .	243,763 23		243,763 23
Interest . . . . .	248,156 88		248,156 88
	<u>\$3,383,847 22</u>	<u>\$714 31</u>	<u>\$3,384,561 53</u>
Boston Tunnel and Sub- way — Part of Gen- eral Expenses . . . . .	\$226,547 21		\$226,547 21
Engineering and miscel- laneous . . . . .	419,490 59	\$200 00	419,690 59
Section One . . . . .	815,591 24		815,591 24
Two . . . . .	614,183 29		614,183 29
Three . . . . .	683,842 49		683,842 49
Four . . . . .	1,205,322 61		1,205,322 61
Five . . . . .	1,080,127 58		1,080,127 58
Six . . . . .	351,508 79	313 81	351,822 60
Seven . . . . .	139,723 14		139,723 14
Eight . . . . .	617,791 57	1,301 10	619,092 67
Nine . . . . .	678,964 18	27 77	678,991 95
Ten . . . . .	142,835 42		142,835 42
Eleven . . . . .	345,493 91		345,493 91
Twelve . . . . .	45,417 52		45,417 52
Interest . . . . .	648,179 81		648,179 81
	<u>\$8,015,019 35</u>	<u>\$1,842 68</u>	<u>\$8,016,862 03</u>
Cambridge Connection — Part of General Ex- penses . . . . .	\$67,261 25		\$67,261 25
Engineering and miscel- laneous . . . . .	258,505 56		258,505 56
Section One . . . . .	590,280 64		590,280 64
Two . . . . .	651,349 54	\$1,198 91	652,548 45
Interest . . . . .	76,722 00		76,722 00
	<u>\$1,644,118 99</u>	<u>\$1,198 91</u>	<u>\$1,645,317 90</u>
Dorchester Tunnel — Part of General Ex- penses . . . . .	\$197,392 47		\$197,392 47
Engineering and miscel- laneous . . . . .	833,272 33		833,272 33
Carried forward . . . .	\$1,030,664 80		\$1,030,664 80

	From beginning of work to Dec. 31, 1928.	Jan. 1, 1929, to Dec. 31, 1929.	Total.
<i>Brought forward . . .</i>	\$1,030,664 80		\$1,030,664 80
Section A . . . . .	409,378 71	\$254 81	409,633 52
B . . . . .	884,472 44	577 97	885,050 41
C . . . . .	460,379 33		460,379 33
D . . . . .	1,129,710 38	1,791 10	1,131,501 48
E . . . . .	2,366,598 58		2,366,598 58
F . . . . .	868,442 95	1 50	868,444 45
G . . . . .	615,245 51		615,245 51
H . . . . .	892,879 48	848 25	893,727 73
J . . . . .	967,632 33	7,127 25	974,759 58
K . . . . .	1,316,071 90	4,898 23	1,320,970 13
Interest . . . . .	1,312,320 20		1,312,320 20
	<u>\$12,253,796 61</u>	<u>\$15,499 11</u>	<u>\$12,269,295 72</u>
Boylston Street Subway—			
Part of General Ex-			
penses . . . . .	\$104,155 53		\$104,155 53
Engineering and miscel-			
laneous . . . . .	240,040 87		240,040 87
Section One . . . . .	763,091 54	\$79 98	763,171 52
Two . . . . .	1,232,792 88	522 50	1,233,315 38
Three . . . . .	585,564 58		585,564 58
Four . . . . .	1,458,935 20		1,458,935 20
Five . . . . .	729,141 17		729,141 17
Interest . . . . .	320,194 59		320,194 59
	<u>\$5,433,916 36</u>	<u>\$602 48</u>	<u>\$5,434,518 84</u>
East Boston Tunnel Ex-			
tension — Part of			
General Expenses . .	\$38,383 04		\$38,383 04
Engineering and miscel-			
laneous . . . . .	976,250 79		976,250 79
Section G . . . . .	328,592 37	\$8,202 51	336,794 88
H . . . . .	673,456 36	30 79	673,487 15
J . . . . .	135,724 66		135,724 66
Interest . . . . .	224,138 91		224,138 91
	<u>\$2,376,546 13</u>	<u>\$8,233 30</u>	<u>\$2,384,779 43</u>
Arlington Station — Part			
of General Expenses .	\$41,313 26		\$41,313 26
Engineering and miscel-			
laneous . . . . .	72,952 00	\$2 20	72,954 20
Construction . . . .	581,864 91	530 26	582,395 17
Extension . . . . .	483,005 17		483,005 17
Interest . . . . .	55,738 68		55,738 68
	<u>\$1,234,874 02</u>	<u>\$532 46</u>	<u>\$1,235,406 48</u>
East Boston Tunnel Al-			
terations — Part of			
General Expenses . .	\$75,407 79		\$75,407 79
Engineering and miscel-			
laneous . . . . .	171,767 65	\$191 96	171,959 61
Construction . . . .	3,407,174 51	759 25	3,407,933 76
Interest . . . . .	168,217 76		168,217 76
	<u>\$3,822,567 71</u>	<u>\$951 21</u>	<u>\$3,823,518 92</u>

## TRANSIT DEPARTMENT.

39

	From beginning of work to Dec. 31, 1928.	Jan. 1, 1929, to Dec. 31, 1929.	Total.
Hyde Park Street Railway —Part of General Ex- penses . . . . .	\$2,195 04		\$2,195 04
Engineering and miscel- laneous . . . . .	309,710 98	\$4,450 00	305,260 98
	<u>\$311,906 02</u>	<u>\$4,450 00</u>	<u>\$307,456 02</u>
Tremont Street Subway Alterations — Acts 1924, Part of General Expenses . . . . .	\$1,093 59		\$1,093 59
Engineering and miscel- laneous . . . . .	819 20		819 20
Adams Station . . . .	2,401 75		2,401 75
Brattle Street — East- erly Platform . . . .	7,723 72		7,723 72
Hanover Street . . . .	49 10		49 10
Haymarket Station . .	15,161 01		15,161 01
Park Street Station — North Platform . . . .	4,486 41	\$412 88	4,899 29
Column Changes . . .	3,597 98	4,262 70	7,860 68
Scollay Station . . . .	420 80	67 60	488 40
Scollay Square Changes — Cambridge and Court Streets Widening . . .	7,311 84		7,311 84
	<u>\$43,065 40</u>	<u>\$4,743 18</u>	<u>\$47,808 58</u>
East Boston Tunnel Al- terations, Acts 1924 .			
Atlantic Station . . . .	\$2,547 08	\$1,854 42	\$4,401 50
East Boston Tunnel . .	5,105 13		5,105 13
Scollay Station . . . .	68 01		68 01
Scollay Station Changes — Cambridge and Court Streets Widen- ing . . . . .	4,656 57		4,656 57
	<u>\$12,376 79</u>	<u>\$1,854 42</u>	<u>\$14,231 21</u>
Dorchester Rapid Transit — Part of General Expenses . . . . .	\$169,135 08	\$36,637 53	\$205,772 61
Engineering and miscel- laneous . . . . .	2,503,494 63	Cr. 2,246,932 05	256,562 58
Section One . . . . .	1,798,903 39	801,273 03	2,600,176 42
Two . . . . .	1,549,136 86	136,251 37	1,685,388 23
Three . . . . .	877,880 97	694,126 77	1,572,007 74
Four . . . . .	1,412,205 68	307,019 11	1,719,224 79
Five . . . . .	280,911 62	1,570,528 69	1,851,440 31
Interest . . . . .	485,435 83	58,750 00	544,185 83
	<u>\$9,077,104 06</u>	<u>\$1,357,654 45</u>	<u>\$10,434,758 51</u>
Traffic Tunnel . . . .		<u>\$53,995 83</u>	<u>\$53,995 83</u>
Chapter 78 — Resolves of 1913 . . . . .	<u>\$389 14</u>		<u>\$389 14</u>

	From beginning of work to Dec. 31, 1928.	Jan. 1, 1929, to Dec. 31, 1929.	Total.
Chapter 84 — Resolves of 1913 . . . . .	<u>\$636 58</u>		<u>\$636 58</u>
Dorchester Tunnel Exten- sion . . . . .	<u>\$520 19</u>		<u>\$520 19</u>
Grand Totals . . .	<u>\$53,552,915 06</u>	<u>\$1,443,372 34</u>	<u>\$54,996,287 40</u>

The report of the Chief Engineer giving the work in detail follows.

THOMAS F. SULLIVAN,  
NATHAN A. HELLER,  
JAMES B. NOYES,  
*Commissioners.*



## REPORT OF THE CHIEF ENGINEER.

---

BOSTON, December 31, 1929.

THOMAS F. SULLIVAN, NATHAN A. HELLER AND JAMES B. NOYES, *Commissioners, City of Boston Transit Department.*

GENTLEMEN,— I herewith submit a report for the year ending December 31, 1929.

The high speed trolley sections of the Dorchester Rapid Transit line which extend beyond the Ashmont Station terminal of the third rail system through Milton to Mattapan, were completed and put in operation during the year. These sections include a part of Section Four, all of Sections 5A, 5B and 5C. There are five stations beyond Ashmont, namely Cedar Grove, Milton, Central Avenue, Valley Road and Mattapan. This latter station is a transfer station for street car and bus passengers, and adjacent to it is a large storage yard for cars. A parking area for automobiles is also provided.

The high speed trolley line from Ashmont to Mattapan is 2.56 miles long and is double tracked the entire length.

In addition to the above, the Department also completed the new ventilation chamber just south of the Shawmut Station; the Columbia Station Overpass; and the relocation of certain columns at Park Street Station of the Tremont Street Subway.

During the year plans and specifications were prepared, and contracts let and completed for the following work on the high speed trolley line:

Section 5B, general contract including grading, rock cut, station platforms, Adams Street Bridge, etc.

Section 5C, general contract, including grading, retaining walls, bridge over river, station platforms, etc.

Removal of old Cedar Grove railroad station.

Wire fence from Hillsdale Street to Cedar Grove Station.

Platforms, walks and gravel roadway at Cedar Grove Station.

Removal of old Milton railroad station.

Removal of building over the old stairway at Milton railroad station.

New Metropolitan water pipes, Adams Street Bridge, Milton.

Relocation of N. Y., N. H. & H. R. R. tracks, Shawmut Junction to Mattapan.

Removal of rails and ties, Central Avenue to Mattapan.

Concrete curb and iron fence, Mattapan.

Busway platforms and parking area, Mattapan.

Changes at the Mattapan railroad station for carmen's lobby.

New water pipe system, Mattapan Yard.

Installation of tracks, ballast, lights and other equipment for the trolley line, Ashmont to Mattapan.

Station building, Mattapan.

The engineering and construction work in the field has been under direction of Assistant Chief Engineer Wilbur W. Davis, and the office work under supervision of Designing Engineer Leonard B. Howe.

Studies, estimates of costs, and surveys in the field on the proposed East Boston Traffic Tunnel have been made during the year.

#### DORCHESTER RAPID TRANSIT, SECTION 4.

That part of the Dorchester Rapid Transit high speed trolley line, designated as Section 4, extends from Ashmont Station to a point beyond the Cedar Grove Cemetery bridge. The construction of the incline approach for high speed trolleys, which is located near the Ashmont Station had previously been built as a part of the main contract for Section 4. At the beginning of the current year, the work remaining to be done on this section consisted of the preparation of the roadbed, the new trackwork and the overhead wiring, and the construction of the Cedar Grove Station platforms and approaches.

In March, the Boston Elevated Railway under contract with the Department for the installation of equipment began trackwork which included placing the ballast and laying ties and rails. Work was also started on erecting the trolley poles and wires. This work was carried through Section 4 and beyond into Section 5A as far as the underpass at Shawmut Junction. The work was completed in May.

Plate I shows the high speed trolley line on Section 4 at the Cedar Grove Cemetery.

In August a contract was let to the Peerless Construction Company for building two concrete side platforms at Cedar Grove Station, a footwalk from Hillsdale Street to the station, and a roadway for vehicles together with a sidewalk for foot passengers from Adams Street to the Station.

The old roadway from Adams Street was narrow and had a surfacing unfit for the present day automobile traffic. It was

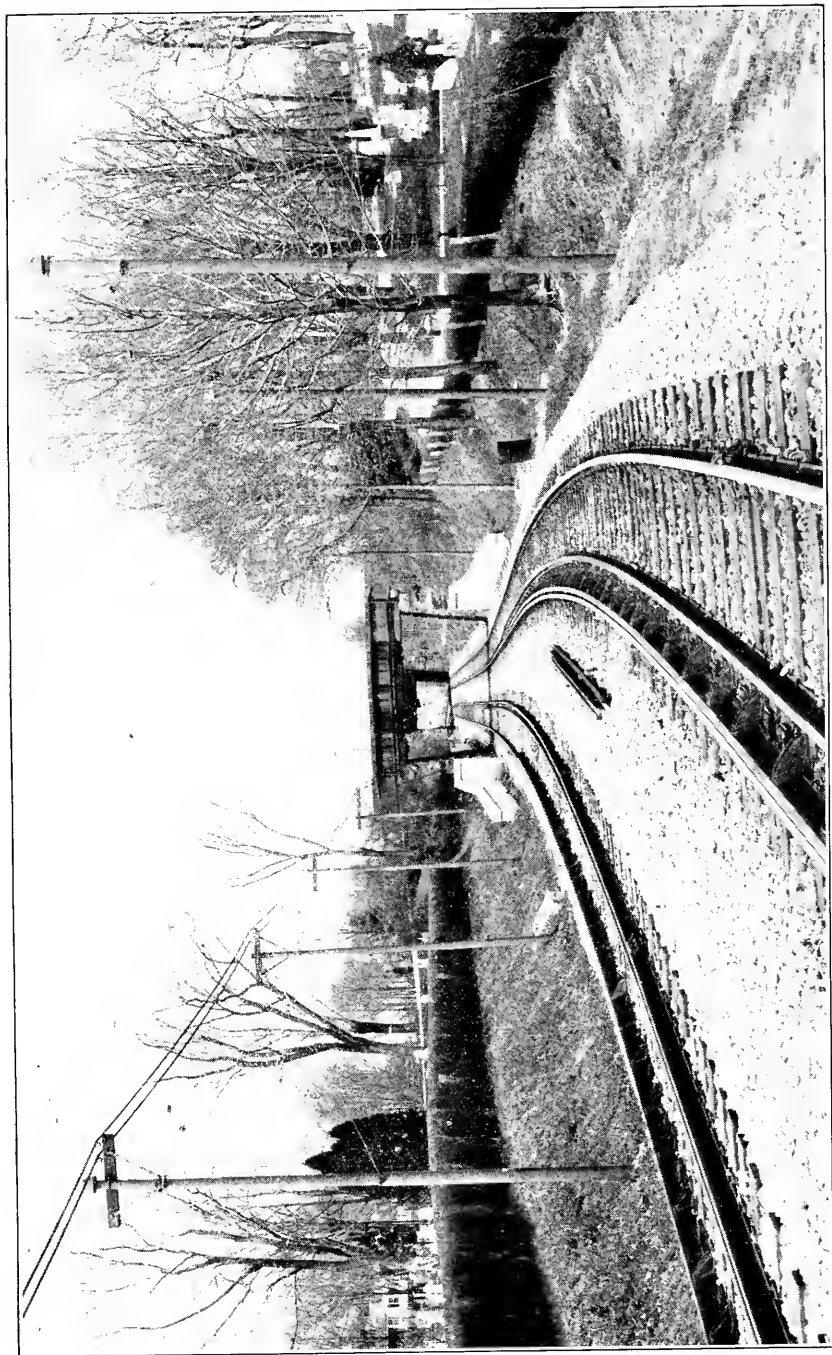


PLATE I.—VIEW ALONG HIGH SPEED TROLLEY LINE AT CEDAR GROVE CEMETERY.



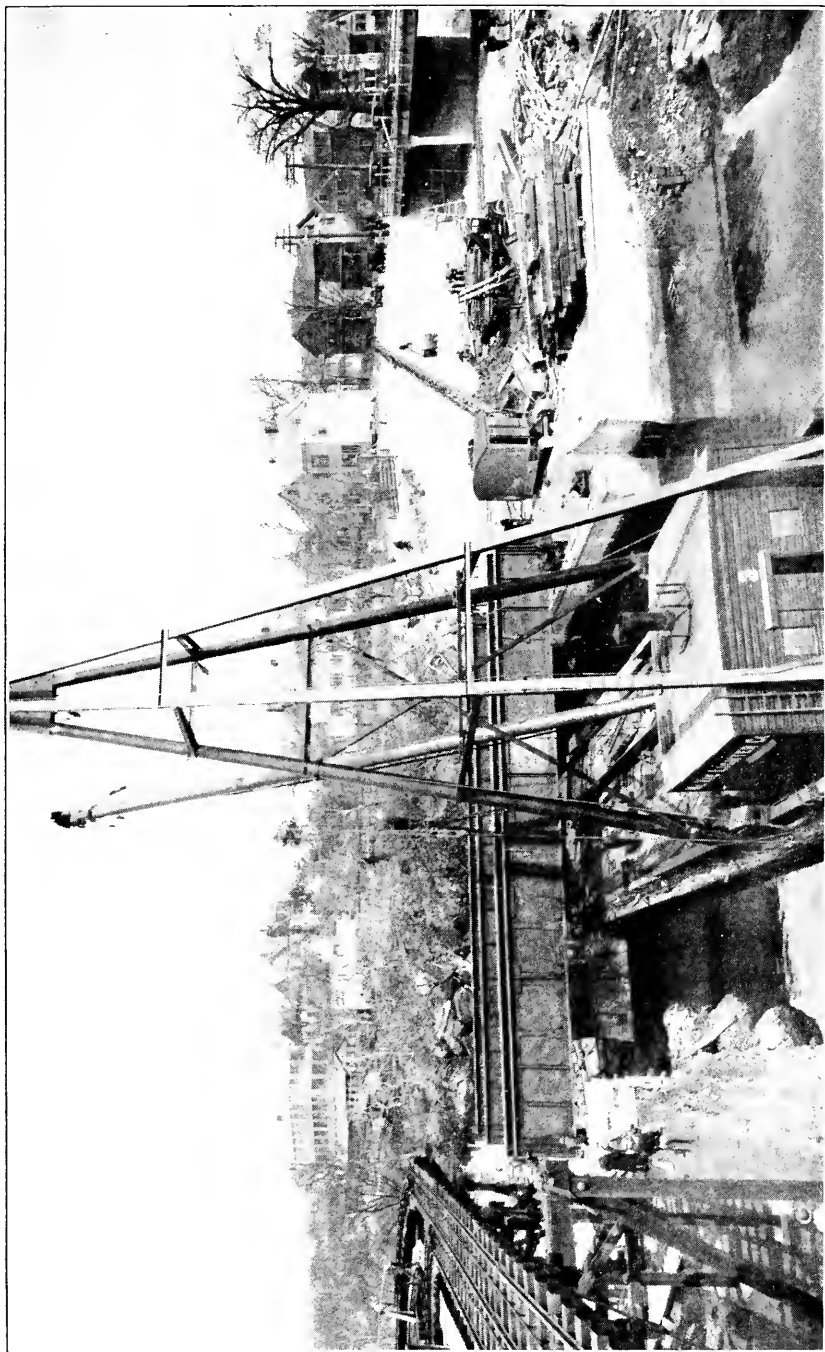


PLATE II.—PLACING HEAVY GIRDERS IN POSITION, NEPONSET RIVER BRIDGE, MILTON.



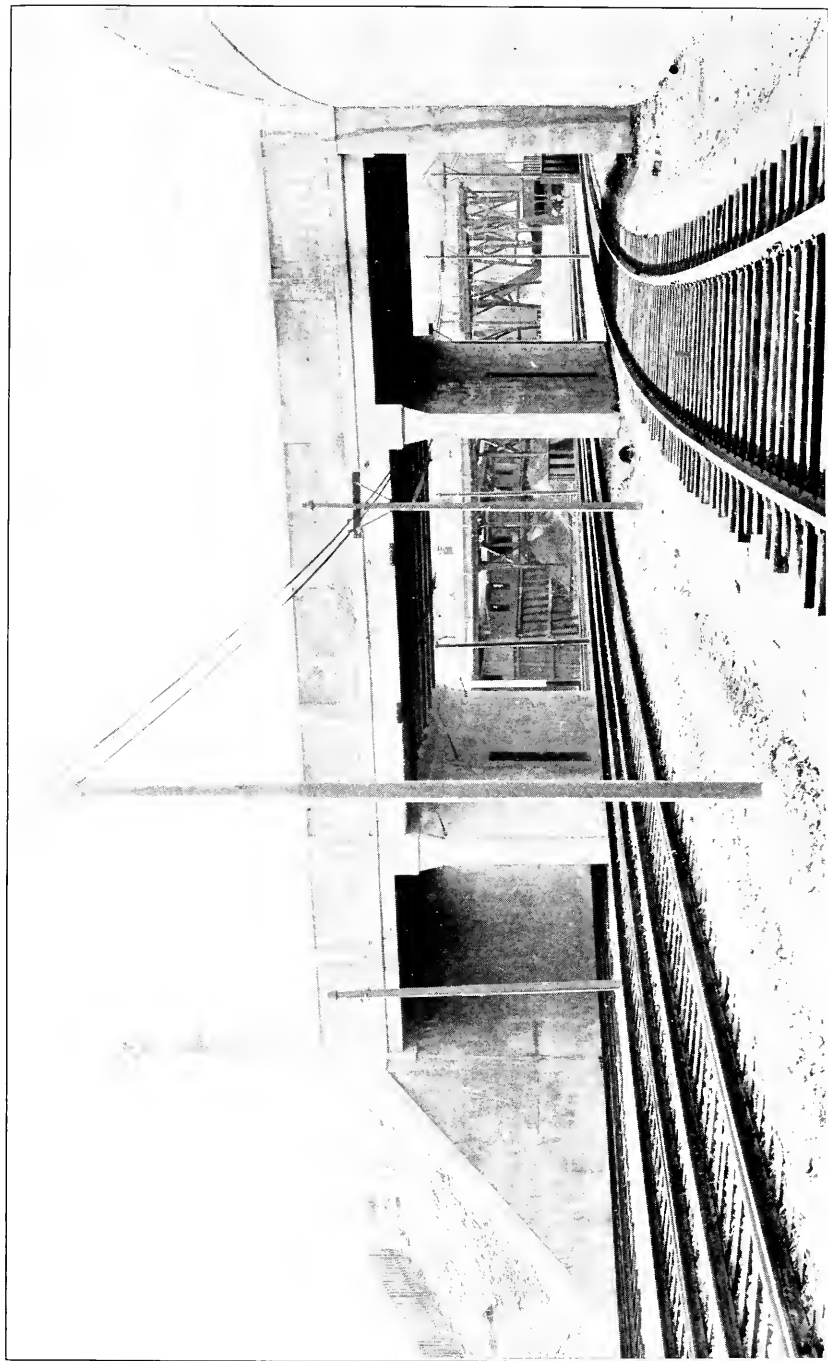


PLATE III.—CREST AVENUE BRIDGE.





therefore regraded and widened and given a tarvia macadam surfacing. The old planked sidewalk, which was badly rotted, was removed and a new sidewalk of bituminous concrete was laid.

In order to provide a shorter approach to Cedar Grove Station for the residents of Hillsdale Street and vicinity, a new entrance and exit passageway was provided from the north end westerly platform. The passageway is six feet in width and is enclosed by a woven wire fence on each side. It passes through a portion of the Codman Street yard, reaching Hillsdale Street at its northerly end. The surfacing of the footwalk is bituminous concrete.

The station has two side platforms of granolithic, 150 feet long, and 10 feet wide. The back edge of the westerly platform, and the ends of both platforms are protected by a pipe rail fence.

## SECTION 5A

Early in the year, the concrete abutments of the bridges over the Neponset River at Milton were completed by the contractor for Section 5A, M. F. Gaddis. The four main girders for the two bridges which had been fabricated in the department's steel shop were loaded onto large trucks at the yard and conveyed to the Army Base, South Boston, where they were transferred to two lighters. The lighters were then towed through Dorchester Bay and up the Neponset River to the bridge site. It was necessary to wait for low tide in order to place them in a temporary position on the abutments. The girders were 9 feet deep and 96 feet long and weighed about 45 tons each.

Plate II shows the girders being placed in position on the abutments by a derrick on one of the lighters.

The southerly or downstream bridge was completed first. The New York, New Haven & Hartford Railroad trains crossing the river just to the north were then transferred from the old bridge to the new bridge, the new track having been laid to connect to the old track opposite the Milton Station. The old railroad bridge was then rolled into its new position on the abutments which had been extended about ten feet to the north. The center bridge which was designed to carry the two high speed trolley tracks was then built. The floor of this bridge is of reinforced concrete supported on steel floor beams.

The construction of the Crest Avenue Bridge, which was partly completed at the date of the last report, was finished and opened to its full width for traffic early in the spring. This bridge spans two high speed trolley tracks in the center and one freight track on each side.

Plate III shows the Crest Avenue Bridge.

The permanent location for the freight track to serve the industries on the north side of the trolley line at Milton, required cutting into the steep bank along Branch Street, and also between Crest Avenue Bridge and the river. This necessitated the construction of a heavy reinforced concrete retaining wall the entire distance. The road bed for this track was prepared by the contractor, who also furnished the necessary gravel ballast. The New York, New Haven & Hartford Railroad then proceeded with the trackwork, starting construction just east of Shawmut Junction and working westerly through the new underpass into the Butler Street freight yard.

Plate IV shows the Shawmut Junction underpass.

The track was then continued alongside the new Branch Street retaining wall referred to above, then across the river bridge and finally connected into the old track opposite the Milton Station. The railroad company also laid the freight tracks in the new Butler Street freight yard. Relocation of this yard required considerable filling and grading on marshy land, and also involved the relocation of the old freight house. The freight house was moved onto a new foundation and the tracks relocated without interruption of freight service.

The routing of the trains through the new underpass on May 14 over the permanent location permitted the contractor to proceed with his grading work on the rapid transit right of way between the underpass and Milton Station. Immediately thereafter the trackwork on this section for the rapid transit trolley line was started.

Plate V is a view from the Crest Avenue Bridge looking easterly toward the Shawmut underpass. The high speed trolley tracks are in the center and the freight tracks on the sides.

At Milton, just east of the permanent location for the station, a temporary platform of cinders was made and a switch was installed on the new high speed trolley line. Trolley car operation between Ashmont and Milton was now possible, and on August 26 the Boston Elevated Railway started a limited

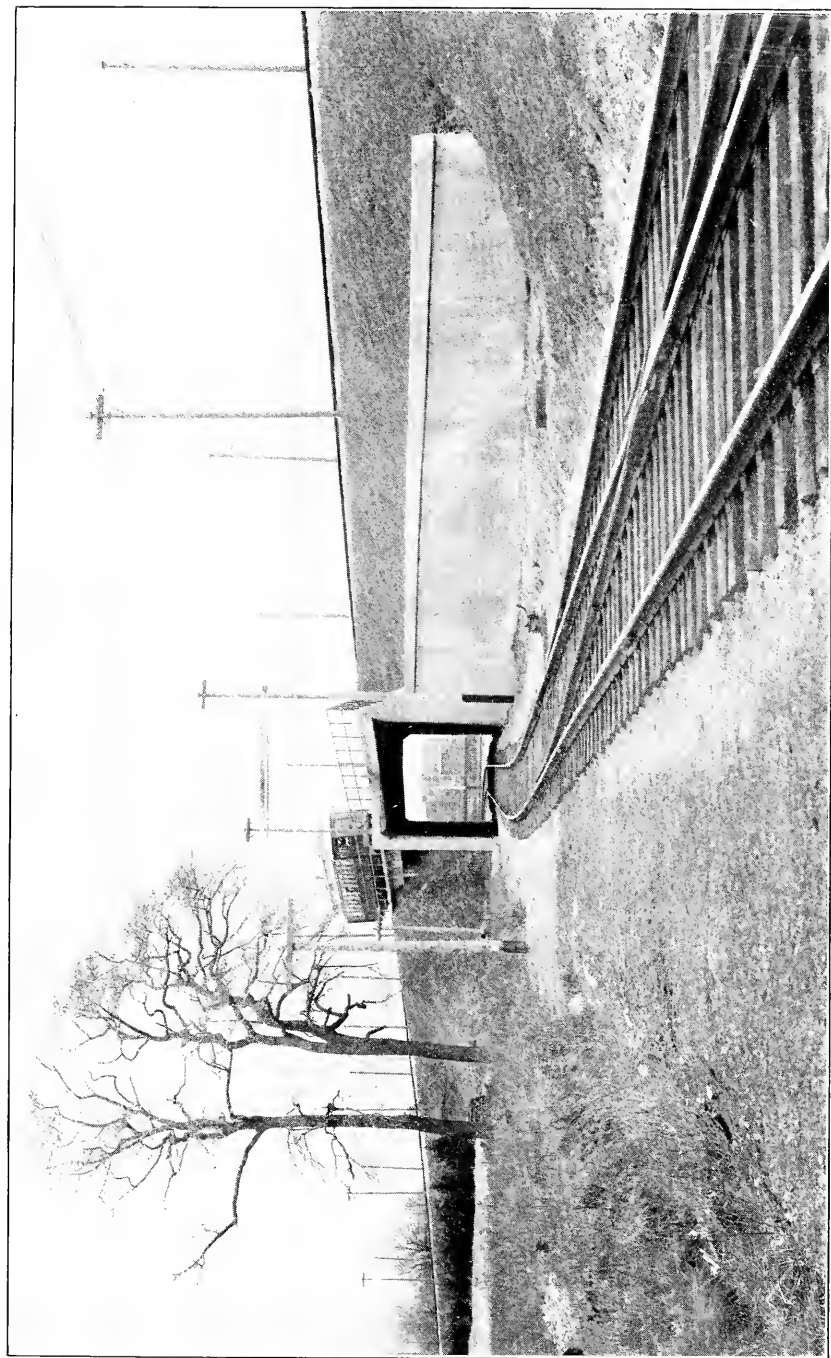


PLATE IV.—SHAWMUT JUNCTION UNDERPASS.



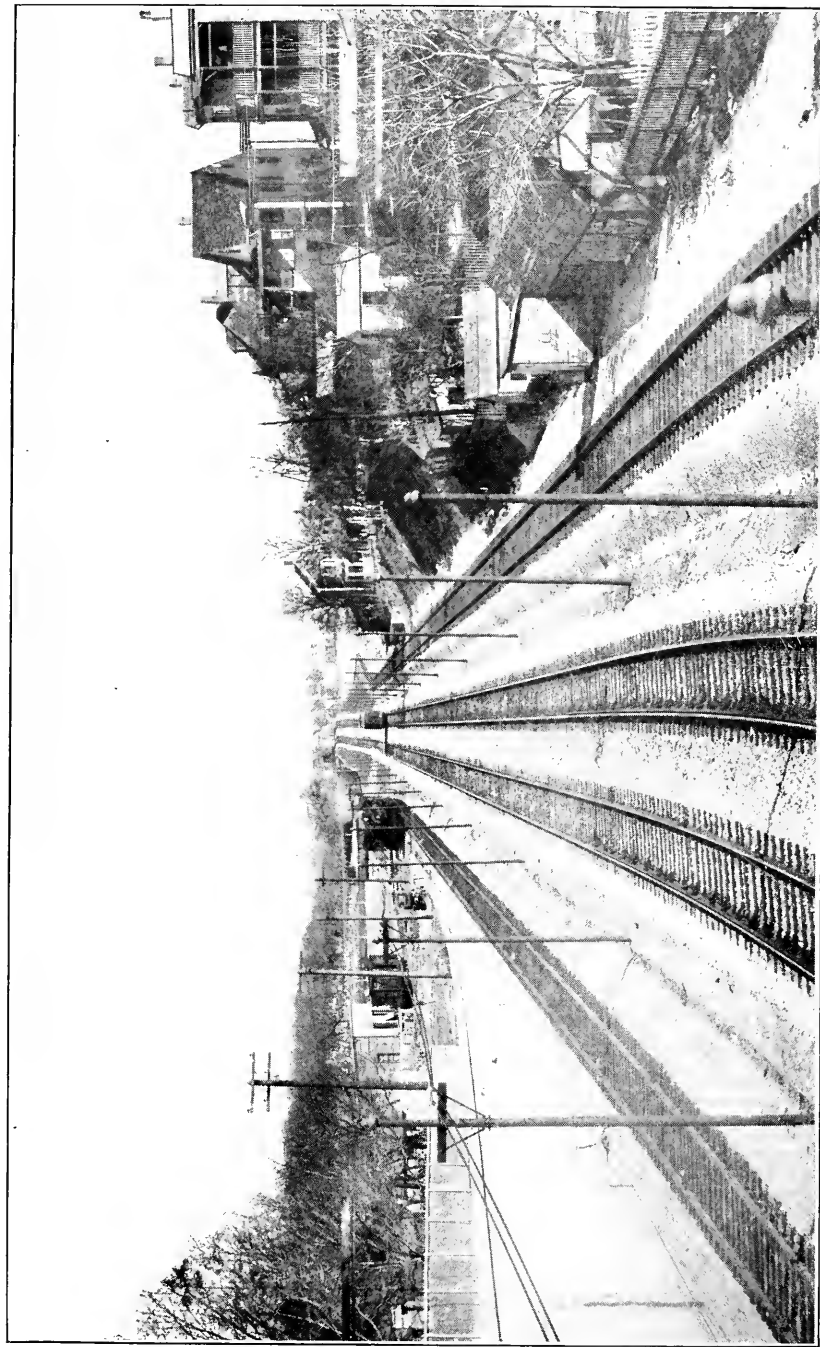


PLATE V.—VIEW LOOKING EASTERLY FROM CREST AVENUE BRIDGE, SHOWING HIGH SPEED TROLLEY  
TRACKS IN CENTER AND FREIGHT TRACKS ON SIDES



service over this portion of the new line. This service permitted the discontinuance of the steam train service, which after this time would have interfered with the construction work on Section 5C, later described.

### SECTION 5B

Section 5B is slightly under one half a mile in length, extending from a point near Milton Station to a point about 600 feet west of Central Avenue.

From Milton Station westerly to Mattapan, the old Shawmut Branch railroad was a single track line. It passed under the Adams Street Bridge, ran alongside and very close to the south bank of the Neponset River for a greater part of the distance. Just south of and adjacent to the track near Milton Station was a steep rock embankment running alongside the track for a length of about 900 feet. Eliot Street was located at the top of this embankment.

It was necessary in accordance with the provisions of the Dorchester Rapid Transit Act to provide permanent freight connections to all sidings then in use from Shawmut Junction to Central Avenue, and therefore the old railroad was left in its original position from Milton to Central Avenue. The location for the new rapid transit line was made by cutting through the rock embankment along Eliot Street and by building a new three track bridge at Adams Street. The rock cut required the relocation of Eliot Street to the south, for a distance of over 600 feet.

The general contract for Section 5B also included the construction of high retaining walls, a new bridge over Pine Tree Brook, construction of Milton and Central Avenue Stations, and construction of the new roadbed including drainage system and new highway surfacing on Eliot Street and Adams Street.

The general contract for Section 5B was awarded to William J. Sullivan, the lowest of seventeen bidders, on March 27, 1929. Work was started on April 1st.

### STATION AT MILTON.

Construction work here was planned so that the Milton Station could be used continuously by passengers using the New York, New Haven & Hartford Railroad until such time as that service ceased and thereafter by passengers using the high speed trolley line by means of the temporary platform previously

mentioned. This required that the work be carried out in successive stages in accordance with a plan of procedure which had been laid out. The contract for Section 5B therefore specified that the new stairway from Adams Street to the Milton Station be constructed first, leaving in temporary use the old wooden stairway which came in the location of one of the new trolley tracks. The wooden building over the old stairway was removed under a separate contract by the Barry Building Wrecking Company during the month of May. The new stairway was of steel and reinforced concrete construction with copper covered concrete canopy. It was completed early in July.

The old railroad station building occupied part of the location for the rapid transit tracks and the new southerly side platform. This building together with the canopy over the old platform was therefore removed, the work being done under contract with the Lowell Building Wrecking Company.

The platform of the old station came partly in the location of the roadbed of the new trolley line and partly in the location for the new southerly side platform. Arrangements were made with the New York, New Haven & Hartford Railroad to build a temporary cinder platform on the north side of their track and somewhat nearer the river. A temporary walk from this platform to the stairway at Adams Street was kept open by the contractor for public use during the period of construction of this part of the work.

The old New York, New Haven & Hartford Railroad track occupied the location for the new northerly side platform at Milton. On September 7 after the passenger train service to Milton had ceased but while the track with its several connections into the Walter Baker Chocolate Company's yard at this place was still in operation for freight, this track was moved northerly to its permanent location and the new side platform for the high speed trolley line was then built.

#### ADAMS STREET BRIDGE

The old Adams Street Bridge spanning the single track line of the railroad had a wooden floor supported on 8-inch by 15-inch hard pine timbers placed 21 inches on centers and spanning about 20 feet. The ends of the bridge timbers rested on two granite abutments which had been laid up dry. The floor or street surface consisted of a double layer of wooden



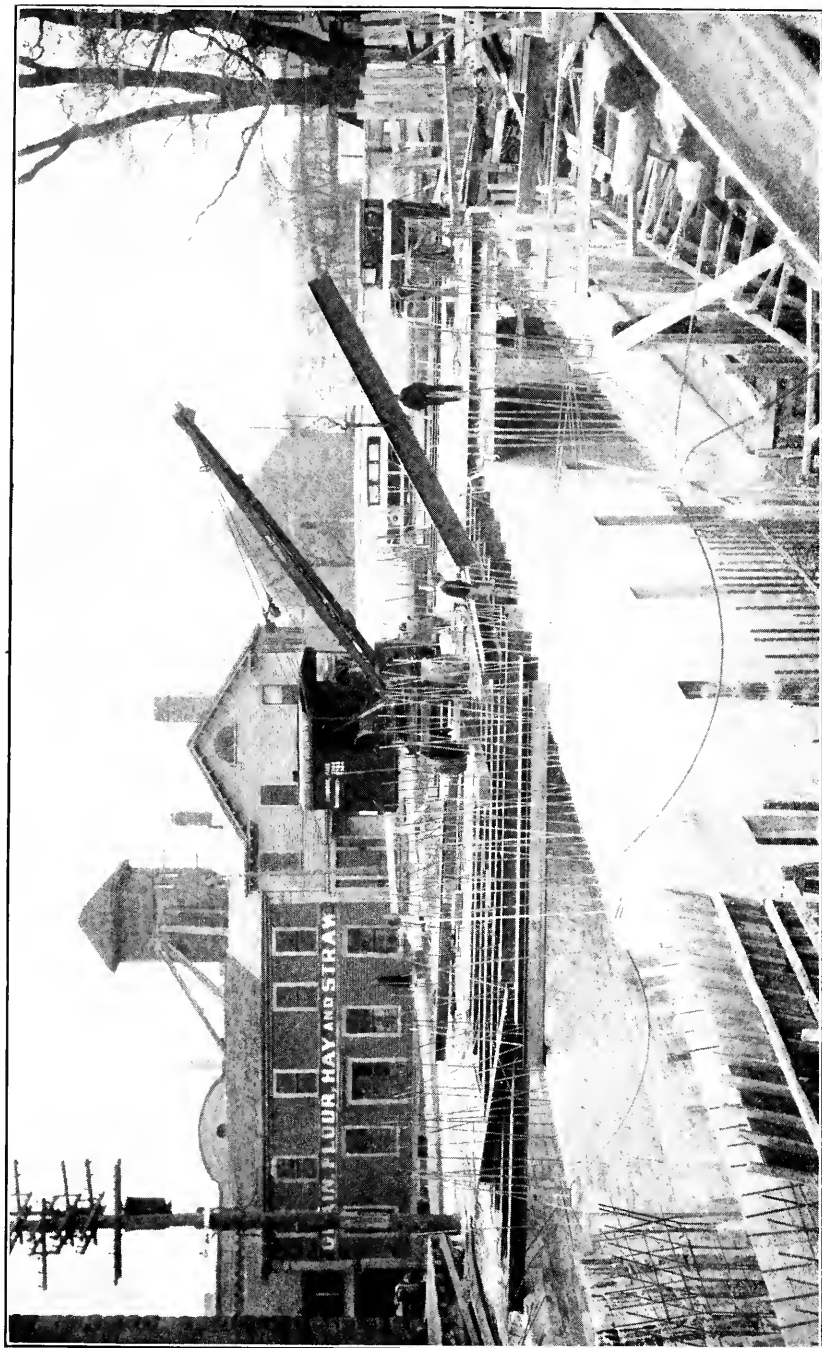
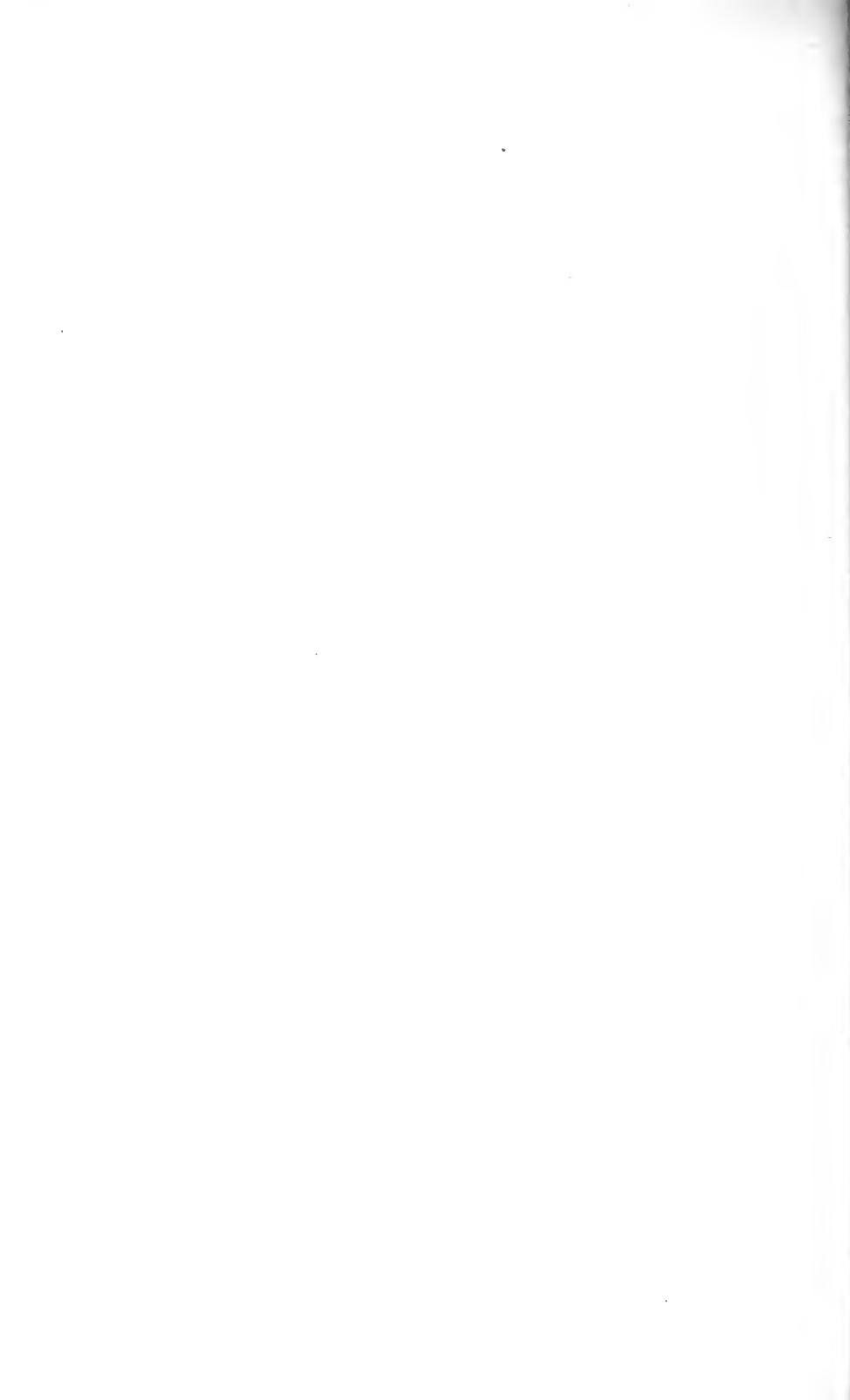


PLATE VI.—VIEW SHOWING CONSTRUCTION OF NEW BRIDGE AT ADAMS STREET, MILTON.



planks laid on the cross timbers. The new bridge which was to span the three tracks was designed to have a heavy concrete abutment on the south side of two 12-inch reinforced concrete piers between tracks.

The old northerly abutment of the railroad bridge was not removed but utilized for the new bridge. The top course of this abutment, consisting of granite blocks at the face, backed with rubble masonry, was removed for a depth of about four feet. The face of the abutment was pointed with mortar, and cement grout was poured into the spaces between the masonry blocks, thereby making a solid mass of masonry. Grout pipes were then inserted through the face of the wall to permit grouting under pressure in case the space was not entirely filled by the gravity method. It was found, however, that no space was left to take the grout by the pressure method. Concrete was placed on the top of the wall for a bearing surface for the new steel floor beams.

The bridge slab was of reinforced concrete supported by 12-inch and 18-inch steel beams spaced four feet on centers. The beams were encased in concrete. On the concrete slab was placed gravel fill and over this was placed a bituminous macadam surface. A solid reinforced concrete fence five feet in height was built on each side of the bridge.

Plate VI is a view of Adams Street Bridge under construction and shows the new concrete on the top of the old abutment at the extreme left, and also the two pier walls and southerly abutment on which some of the floor beams are being put in position.

The old bridge carried two 22-inch Metropolitan water mains under the sidewalk on the easterly side of Adams Street. A 12-inch gas pipe crossed under the bridge hanging between the timbers. There were also several main line ducts of the New England Telephone & Telegraph Company. It was necessary to keep all these in service during the reconstruction. Permanent pipe crossings between floor beams of the bridge for these pipes were provided in the new bridge.

The Water Division of the Metropolitan District Commission laid a temporary 22-inch steel water pipe along the surface and in the center of Adams Street. This pipe crossed the old bridge, and was laid for a distance sufficient to allow for the construction of the new bridge, which was much wider than the old. The ends of the temporary pipe were connected

by special fittings to the existing double pipe line north and south of the bridge. This temporary water pipe took care of the service during construction of the easterly portion of the new bridge on which the permanent water pipes were to be carried. The maintenance of this temporary pipe was very important as it carried the water supply for a large part of Milton and all of Quincy.

Plate VII shows the temporary water pipe.

The portion of the bridge carrying the water pipe was closed to traffic, after which this part of the old bridge floor together with the old water pipes and the southerly bridge abutment were removed. Excavation for the corresponding part of the new bridge was made by steam shovel and the easterly section of the new bridge was then built. A pipe crossing, under the sidewalk, was provided for the new water pipes. A contract was let by the Department for new special water pipes. Upon completion of the easterly part of the bridge, the new water pipes were placed by the Water Division of the Metropolitan District Commission.

The easterly part of Adams Street was then opened to traffic and the westerly part of the street closed.

The original plans contemplated maintenance of a surface car track carrying cars of the Eastern Massachusetts Railway over the bridge, and in Eliot Street. This Company, however, after negotiations with the town of Milton and other authorities, was permitted to permanently abandon this end of its line, *i. e.*, between Central Avenue and Pierce Square, Dorchester, and to substitute buses therefor. This simplified the work on the westerly portion of the bridge and enabled the construction to proceed faster.

The town of Milton laid a new water pipe line in a pipe crossing provided under the westerly sidewalk of the bridge to take the place of a water pipe line passing under the railroad location, some distance west of the bridge. Special crossings were left in the bridge floor for gas pipe, telephone ducts, and for other pipes and cables to be laid in the future. Relocations of water pipes, sewers, ducts, poles and wires were necessary on account of the relocation of Eliot Street.

A sewer syphon consisting of two 6-inch cast-iron pipes passed under the foundations of the old bridge. It was located in the center of Adams Street and had an overflow sewer for surface drainage branching off from it and running under the

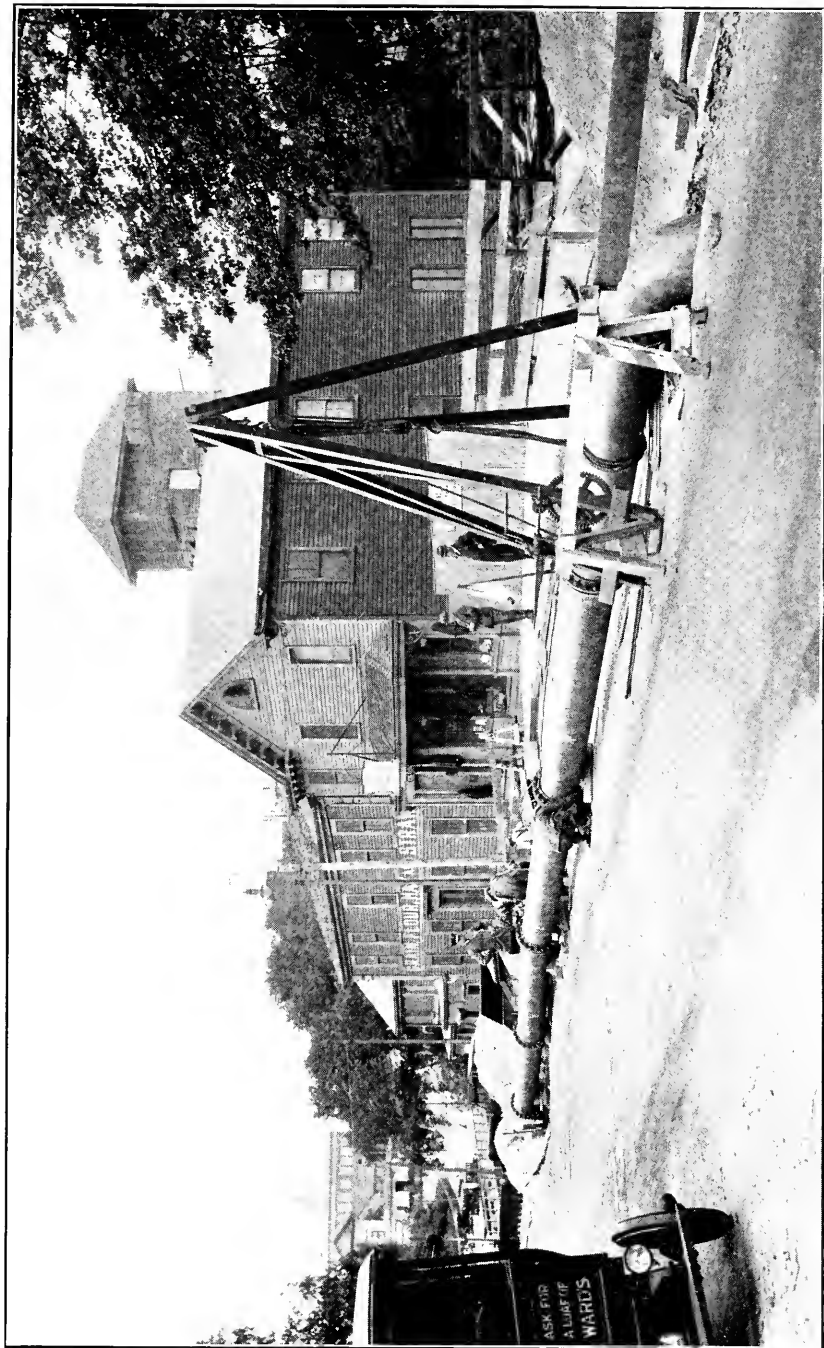


PLATE VII.—TEMPORARY WATER MAIN, USED DURING THE CONSTRUCTION OF THE NEW BRIDGE AT ADAMS STREET, MILTON.



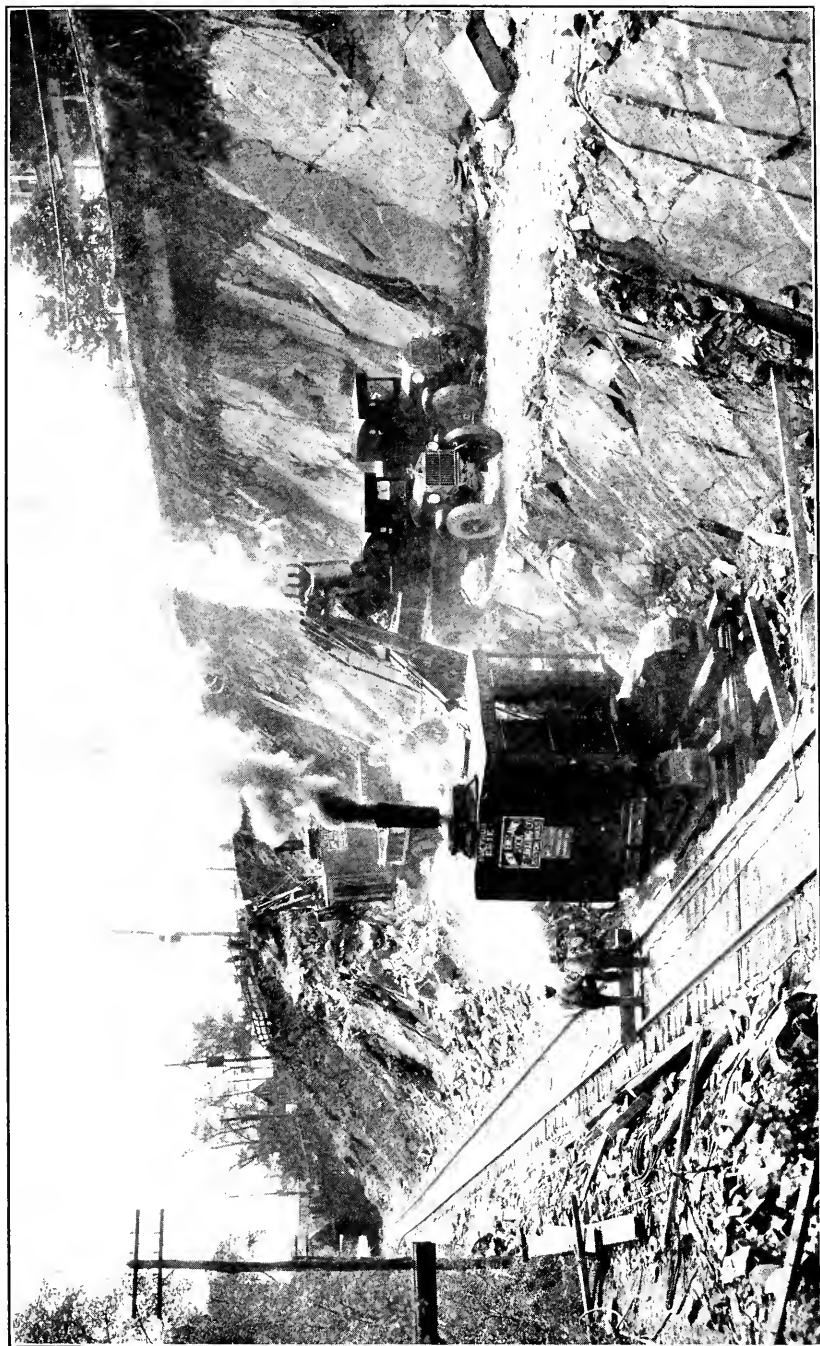


PLATE VIII.—VIEW SHOWING ELIOT STREET CUT DURING CONSTRUCTION.





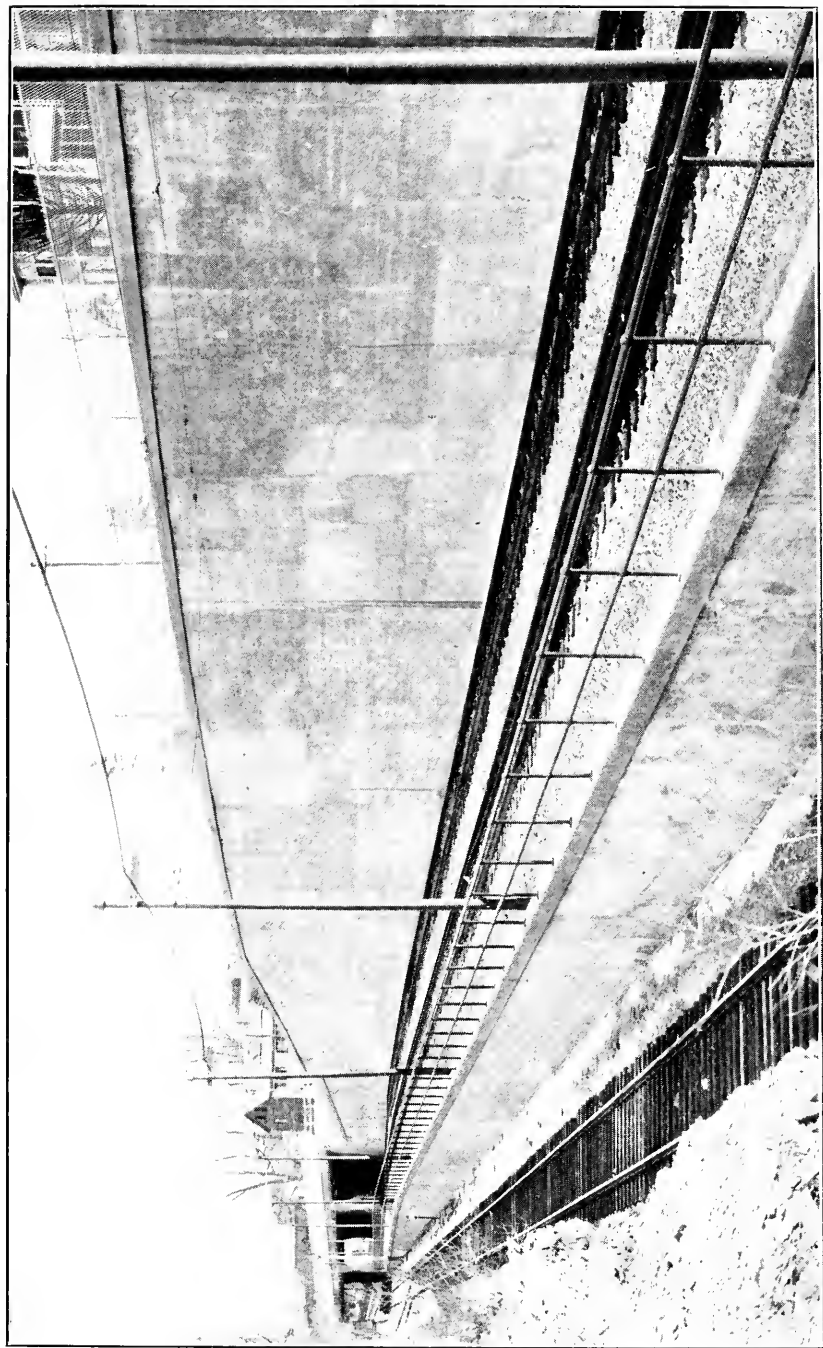


PLATE IX.—VIEW SHOWING ELIOT STREET CUT AFTER COMPLETION.



old platform of the Milton Station and along by the railroad tracks to the Neponset River. The new Adams Street bridge and the changes at Milton Station required a new syphon in Adams Street passing under the new tracks and a new overflow for about one half the distance to the river.

The high speed trolley tracks at Central Avenue cross at grade. Should the third rail system be extended from Ashmont to Milton in the future, it would be necessary to eliminate this grade crossing by crossing above the street level. In anticipation of this, the roadbed of the trolley line from Milton Station for about 500 feet was built on a 3 per cent up grade, which is much steeper than the grade of the old Shawmut Branch railroad adjacent. The roadbed on this 3 per cent grade, if extended in the future, will cross above Central Avenue and give sufficient clearance at that point. This plan also saved considerable rock excavation through the cut; and also reduced the height of the retaining wall on the Eliot Street side from that which it otherwise would have been.

On account of the stratified and seamy nature of this ledge and also because of the existence of a layer of earth on top of the ledge, it was necessary to make this retaining wall continuous from Adams Street bridge westerly to the end of the cut, a length of about 900 feet. The difference of elevation of the freight track and of the tracks for the rapid transit line made necessary a retaining wall between the two roadbeds all the way from Adams Street bridge to the Pine Tree Brook bridge near Central Avenue.

Rock excavation in this cut started in May and continued through the month of November. Most of the surplus rock and other excavated material from this section was needed and was used for filling on the rapid transit line at Valley Road Station and in the Mattapan Yard. For the remainder, dumping places were found on marsh land belonging to the Commonwealth near Bearse Avenue and on private land adjacent to the right of way.

Plate VIII shows rock excavation through the cut. The old Adams Street bridge may be seen at the left.

Plate IX shows the completed construction at this point. The two upper tracks are the high speed trolley tracks. The new Adams Street bridge is at the left.

It was planned to keep Eliot Street open for both automobile and foot traffic during the changes. To do this it was first

necessary to relocate that part of Eliot Street which was to be cut away. The land previously taken for relocation of Eliot Street was of such elevation that considerable excavation was required together with the removal and reconstruction of a stone masonry retaining wall at the southerly sidewalk line. After the excavation was done and the retaining wall built, new edgestone was laid and a new granolithic sidewalk laid and opened for pedestrians.

After the Eastern Massachusetts Railway cars had been removed from Eliot Street, arrangements were made between the contractor and the town of Milton to close Eliot Street between Central Avenue and Adams Street bridge for vehicles. This simplified the manner in which the work could be handled on both Eliot and High Streets, where the grade approach to Eliot Street was changed, and also on the westerly portion of Adams Street bridge.

The relocation of Eliot Street made new road construction necessary from Adams Street to a point about 600 feet westerly. The road surface including that on the Adams Street bridge is bituminous macadam. Both Eliot Street and Adams Street were finished and opened for traffic on December 20, 1929.

The location of the high speed trolley line required a new bridge over the Pine Tree Brook, just east of Central Avenue, the old bridge being used for the permanent freight track at this place. The abutments and wing walls of the new bridge are of concrete and the stringers are 10-inch H-beams spaced 3 feet 10 inches on centers. These beams are filled in between with reinforced concrete making a solid floor. The work at Pine Tree Brook was done in August when the amount of water in the brook was small and could be easily and safely flumed in a steel pipe of large diameter.

#### CENTRAL AVENUE STATION.

The Central Avenue Station consisted of two concrete side platforms of the same dimensions and similar to those at Milton Station. They occupied the location of the old Central Avenue Station which was torn down by the Department before the contractor was ready to start construction work at that point.

Between Central Avenue Station and the westerly end of the section, the ground for the location of the trolley line was

of high elevation and required steam shovel excavation for the entire width. The material was large boulders with earth between. A concrete retaining wall was required for the whole length, from Central Avenue Station to the end of the section through this cut, about 500 feet.

The contract for Section 5B was completed on December 23, 1929.

### SECTION 5C.

Section 5C is about one mile in length and extends from a point about 600 feet west of Central Avenue to Mattapan Square.

On June 14, 1929, the general contract for Section 5C was let to the Peerless Construction Company, the lowest of eleven bidders. The work included grading, construction of a road-bed, station platforms, retaining walls and a bridge across the Neponset River at Mattapan.

Section 2 of the Act authorizing the construction of the Dorchester Rapid Transit provided that passenger service on the Shawmut Branch to Mattapan by the New York, New Haven & Hartford Railroad should continue until the new line to Mattapan was completed and ready for operation except as otherwise authorized or required by the department of public utilities. In order to keep trains running as long as possible, it was planned to build the new southerly trolley track between Milton and Mattapan, which would permit high speed trolley operation while the old railroad track was being removed and the new northerly track was being laid. The old railroad track, however, ran near the center of the right of way and in order to excavate for the roadbed and lay the new southerly trolley track in its permanent position, it was first necessary to move the old railroad track toward the river a distance of about four feet, extending from a point near the beginning of Section 5C to a point near Capen Street. From Capen Street to the bridge near Mattapan, the track was to be moved over to the north a still greater distance. At Capen Street, a steep bank had to be cut away before the track could be moved over. In other places along the line where the track was close to the river bank, filling had to be placed to get a sufficient shoulder to carry the track safely. Certain grading in the Mattapan yard could not be done until after the termination of service by the New York, New

Haven & Hartford Railroad, as the turntable and track leading to it had to be maintained. Therefore, the contract specifications for Section 5C provided for the work being done in successive stages in order that the traffic might not be interrupted.

On June 17, the Peerless Construction Company started excavation work at Capen Street. Soon after, the New York, New Haven & Hartford Railroad moved its long line of telegraph poles and tracks toward the river without interruption of service. This company also removed some of the freight tracks in the Mattapan yard, which were not needed, in order to give the contractor opportunity to proceed with grading the yard. The contractor then proceeded with grading all along the line. Some of the surplus excavation was used to fill out the bank of the river at Valley Road Station, where the contract called for construction of a platform. Most of the remainder of the surplus excavation was dumped on the low area near the river at the easterly end of the Mattapan yard.

#### VALLEY ROAD STATION.

The work on this section included the construction of an additional station about half way between Central Avenue and Mattapan, there being no station on the railroad between these points. This station has two granolithic side platforms, each 150 feet long. The station is known as Valley Road Station. To provide suitable entrance and exit, a vacant lot on Eliot Street near Valley Road was taken by the Department. The lot was graded, and a granolithic walk and a flight of concrete stairs was built leading down to the southerly or inbound platform.

Plate X is a view of Valley Road Station and the stairway leading from Eliot Street.

A retaining wall was built at the back of the southerly platform. A concrete fence was built at the back of the northerly platform for protection to the passengers on account of the proximity of the steep bank down to the Neponset River.

On account of the abrupt rising of the ground at a location about one half way between Valley Road Station and Capen Street on the south side of the cut, another heavy reinforced concrete retaining wall was necessary.

On approaching Mattapan the high speed trolley line leaves the town of Milton crossing the Neponset River a second time.

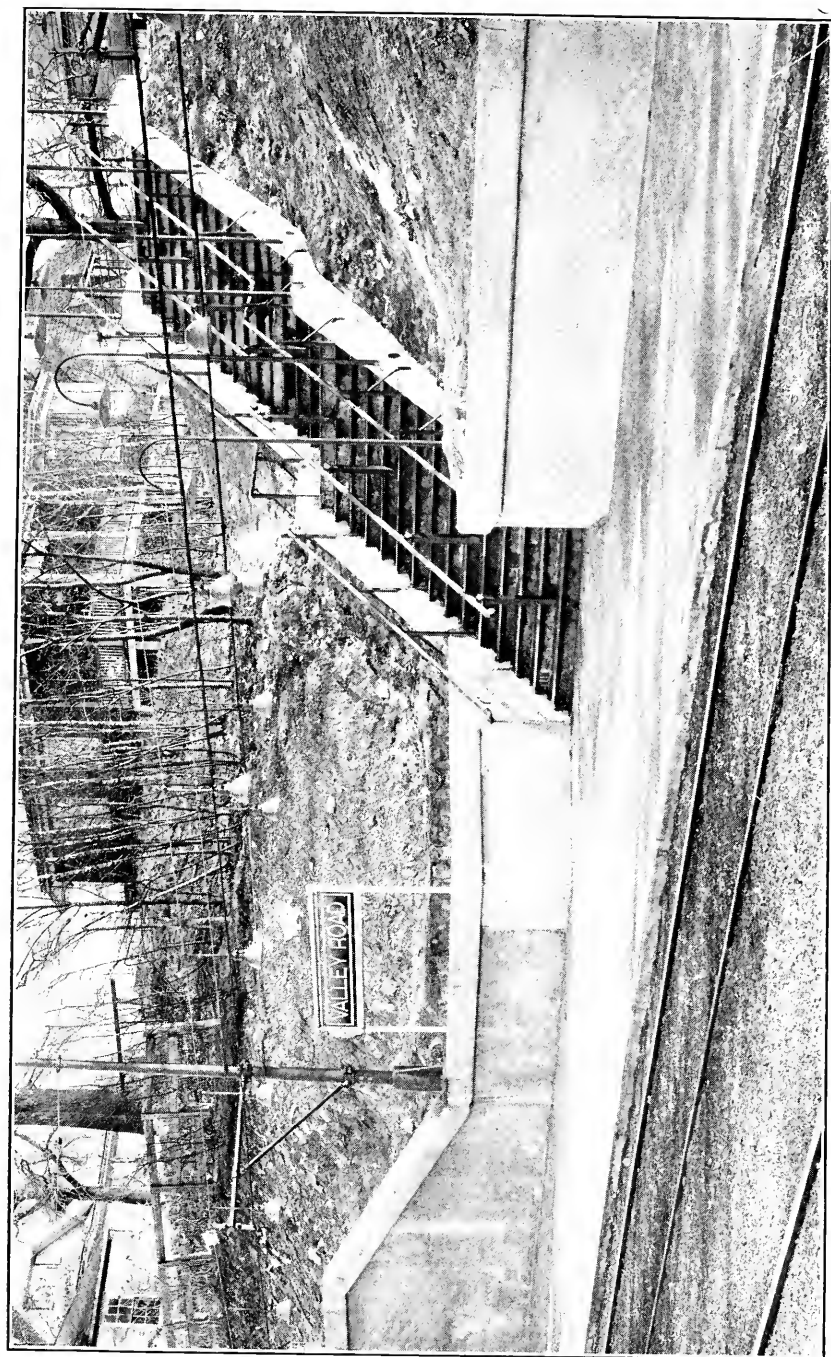


PLATE X.—VALLEY ROAD STATION, AND STAIRWAY FROM ELIOT STREET.





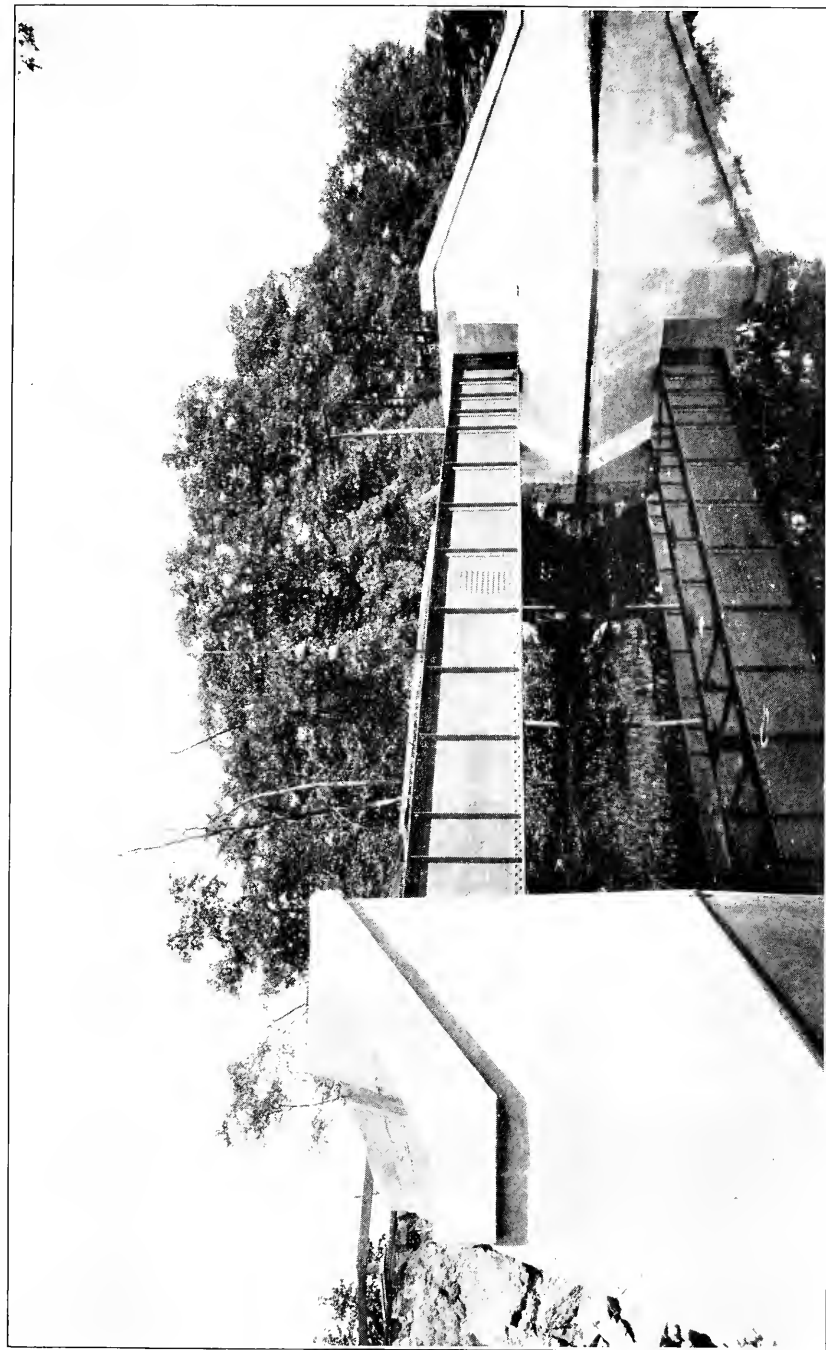


PLATE XI.—NEPONSET RIVER BRIDGE AT MATTAPAN.



The old railroad bridge at this point was a single track bridge, and it was planned to use the old bridge for the new northerly track and to construct a new bridge for a southerly track.

Construction of the abutments and wing walls required cofferdams to be built on both sides of the river. The one on the east side was built with cement bags, filled with sand. On the west side, due to the rock foundation being about six feet lower than on the east side, the cofferdam was built by driving a single row of sheeting and placing clay against it on the outside. The work on the abutments and wing walls was simplified by opening the gates at the Walter Baker Chocolate Mills in Milton during the summer shutdown of the mills, thereby lowering the water several feet at this bridge. The foundations were carried down to solid rock which was about five feet below the river bed. The westerly abutment and wing wall on the Mattapan side was completed first, the easterly abutment being finished shortly afterward. The new plate girders were then erected and the reinforced concrete floor placed.

Plate XI is a view of the Neponset River Bridge at Mattapan.

The progress being made on Section 5C indicated that by the latter part of August the work would reach the stage where nothing more could be done until steam train service on the line was abandoned, and the tracks removed. In view of the possible discontinuance of railroad service, arrangements were made by the Boston Elevated Railway to handle passengers from Mattapan and Central Avenue Stations by means of buses. Plans were also being made for the trolley service between Milton and Ashmont as previously described. The New York, New Haven & Hartford Railroad, therefore, petitioned the Department of Public Utilities to be allowed to discontinue all passenger train service, stations and facilities on the Shawmut Branch between Neponset and Mattapan in Boston and Milton. A hearing was held on July 23, and on July 31 the necessary permission was granted and all steam train service ceased on August 25. Immediately thereafter a contract was let to J. W. Pearson to remove the rails and ties over the abandoned portion of the railroad including the Mattapan yard. The Peerless Construction Company followed the removal of the track material with the work of grading and placing new gravel on part of the line. A solid reinforced concrete floor was placed on the old railroad bridge. The

station platforms were built in the Mattapan yard, and the entire contract was completed on October 3.

After the removal of track material in the Mattapan yard, additional contracts were let for the new yard and station.

A contract was let to J. J. Brock Company for furnishing and installing an 8-inch water pipe line from River Street to serve Mattapan yard. From this main there are branches for five fire hydrants and for twenty-one outlets for car washing purposes and service to the carmen's lobby.

A contract was let to J. A. Singarella for the construction of a concrete station building from the northerly end of the three platforms for trolley cars. This building is designed to provide for extension in the future. The work was begun in October and completed in November.

A contract was let to the Banspar Construction Company for a concrete curb and wire fence, six feet high, completely surrounding the Mattapan yard. This work was completed in October.

A contract was let to Archdeadcon & Sullivan for alterations to the old Mattapan Station building in order to remodel it for use as a carmen's lobby. The work included installing new plumbing, a metal ceiling, and a new heating plant, grading and refacing the old foundation where it was exposed, repairing the roof and under side of the overhang on the outside of the station, painting the woodwork both inside and outside of the station, installing grills and also a new floor.

A contract was let to A. G. Tomasello & Son, Inc., for the construction of a busway, platform and parking area. The railroad yard on River Street, formerly used by the Boston Elevated Railway for storage of cars, was required by the Department for a parking area for the buses and a busway from the station.

The Boston Elevated Railway began installation of the tracks in the Mattapan yard early in September. The following month these tracks were in condition to be used for storage of their cars formerly at the River Street yard and this latter yard was abandoned. The small building in the yard was removed by the Department and the contractor proceeded with excavation by steam shovel, the construction of a new surface for this parking area and of a busway on River Street. A granolithic walk from River Street to the station in the Mattapan



PLATE XII.—MATTAPAN STATION.



yard was built in connection with this contract and enclosed by a six-foot wire fence, the fence being built as part of the contract with the Banspar Construction Company.

Upon completion of the main contract by the Peerless Construction Company the work of laying the tracks easterly from Mattapan yard to a point just beyond Central Avenue was begun. After the completion of the retaining wall and bridge at Adams Street the connecting link between Milton Station and Central Avenue was completed.

On Thursday, December 19, an official inspection of the high speed trolley line was made by His Honor, Mayor Malcolm E. Nichols, and on Saturday, December 21, the line was opened to the public.

Cars are now running on three-minute headway in the morning and evening during rush hours, and on seven and.. eight-minute headway at other times. The running time between Mattapan and Ashmont is ten minutes.

Plate XII is a view of the Mattapan Station.

Plate XIII is a plan of the Mattapan terminal, showing the station, yard, busway and parking area.

## DORCHESTER RAPID TRANSIT. SECTION ONE

### COLUMBIA STATION OVERPASS

The construction of this overpass or foot-bridge for us of passengers living in the vicinity of Crescent Avenue was continued during the first part of the year by A. G. Tomasello & Son, Inc. The work was started during the previous year and its construction was described in the last annual report. It was completed and opened for traffic on March 18.

Plate XIV is a view of the overpass looking southerly from Columbia Station.

## SECTION THREE

### VENTILATION CHAMBER

When train operation was started in the covered section of the Dorchester Tunnel between Park Street and Ashmont, it was noticed that air currents were developed in the entrance and exit building at the Shawmut Station, although no unusual currents were perceptible at the station platforms.

At intervals when trains were approaching the station the pressure of air in the building would cause the exit doors to

swing outward. Trains leaving the station would cause a vacuum in the building and produce an opposite effect on the action of the doors. The matter was investigated and a great many readings were made with an anemometer to determine air velocities, etc.

A model was made of a portion of the covered section from a point 570 feet north of the station to a point 1,395 feet south of the station, including the platforms, the lobby building and the stairway openings. The scale was 1 foot to 240 feet. Air currents were forced through this model by means of a forge blower. The model was made with adjustable openings at various locations and of varying areas.

The conclusion reached as a result of the tests was that two openings, one in the west wall just south of the station and one in the west side wall just north of the station, each about 400 square feet in area, would entirely relieve the situation. It was decided to cut the opening south of the station first in order to check up the results of the tests before any work was done in a second opening.

A contract was let for the construction of this ventilation chamber on November 12 to the Brophy Contracting Company, the lowest of four bidders.

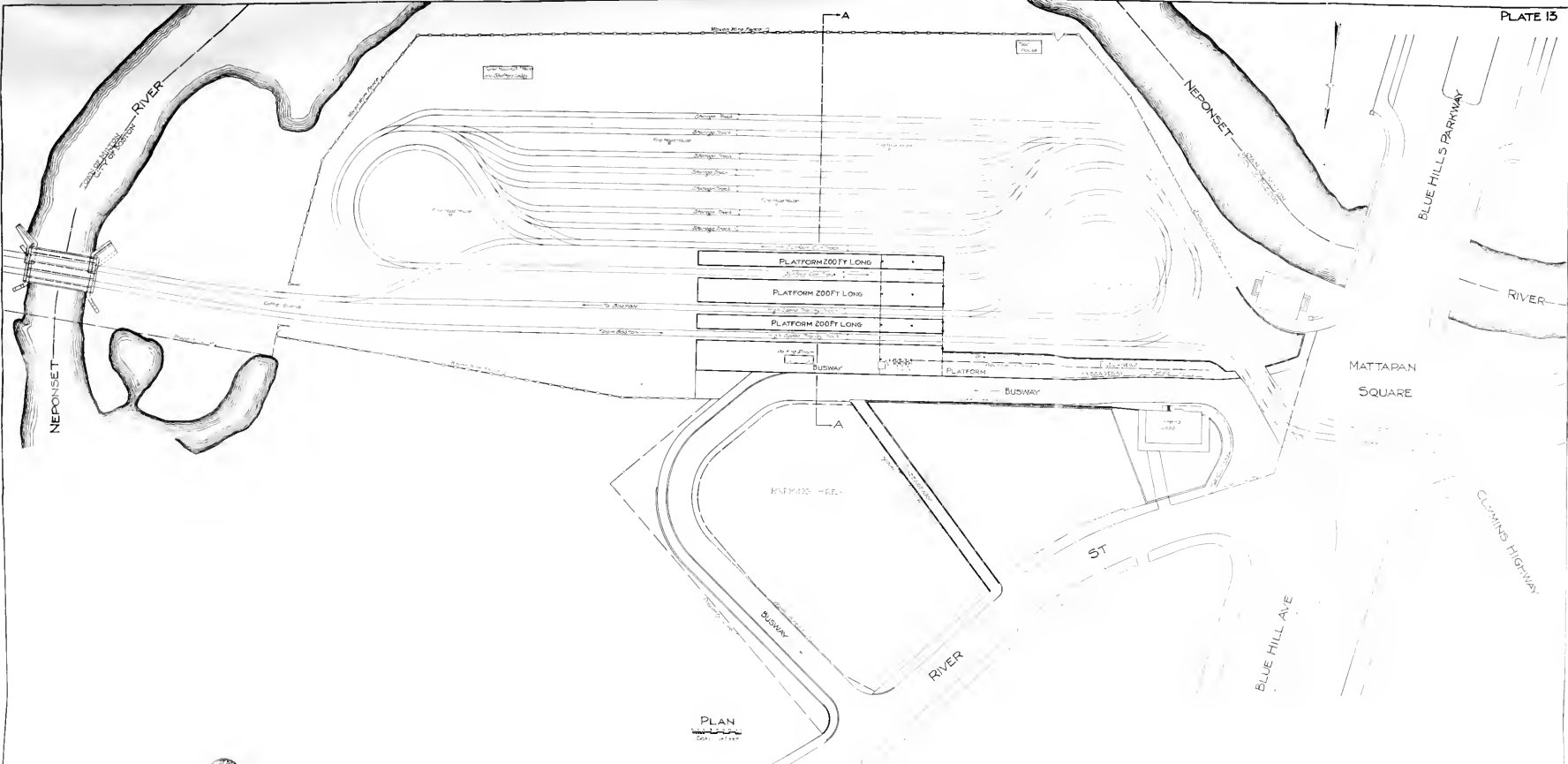
A permanent chamber with walls of reinforced concrete was first built on the outside of the covered section to support the earth around the opening through which the air will be conducted to the surface. A steel grating will be placed on the top of this chamber and securely anchored. A temporary wooden partition was built just inside the wall of the covered section for the length of the opening to be cut, to protect the trains and the workmen. Permanent steel columns have been placed in vertical slots cut through the side wall and under the ends of the roof beams which ends had rested on the sidewall before. The reinforced concrete between the columns is now being cut out.

## TREMONT STREET SUBWAY

### PARK STREET STATION — RELOCATION OF COLUMNS

Opposite the northerly end of the Park Street Station westerly platform, the track for a length of about 50 feet, is laid on a curve having a radius of 50 feet. From the end of this curve is a short tangent, then the curve of the track





PLAN  
Scale 1" = 100'

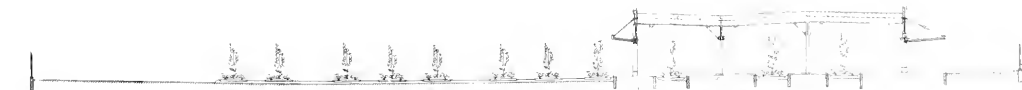
# DORCHESTER RAPID TRANSIT MATTAPAN STATION

CHAPTER 480 OF THE ACTS OF 1923  
DECEMBER 1923

ERNEST R. SPRINGER  
CHIEF ENGINEER

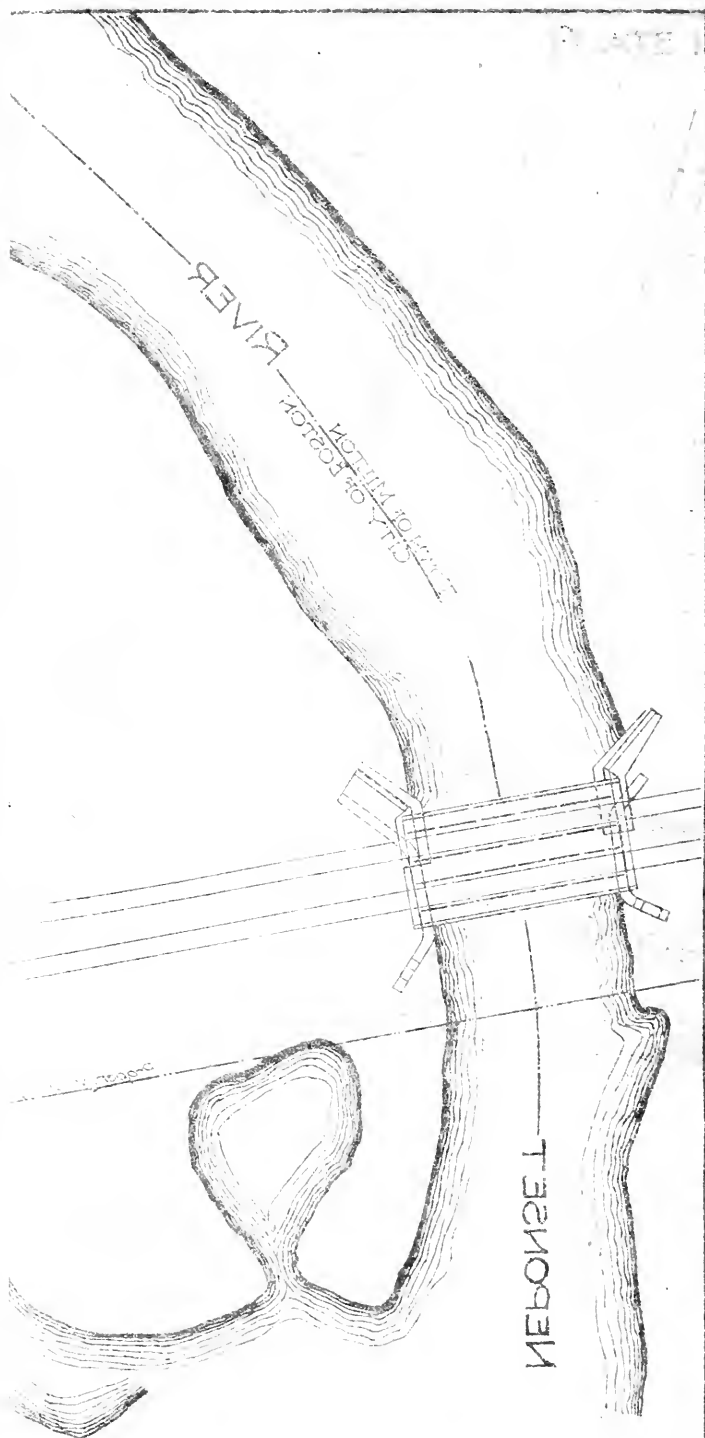
THOMAS F. SULLIVAN, CHAIRMAN  
NATHAN A. MELLER  
JAMES D. NOYES

COMMISSIONERS



CROSS SECTION AA

Scale 1" = 10'



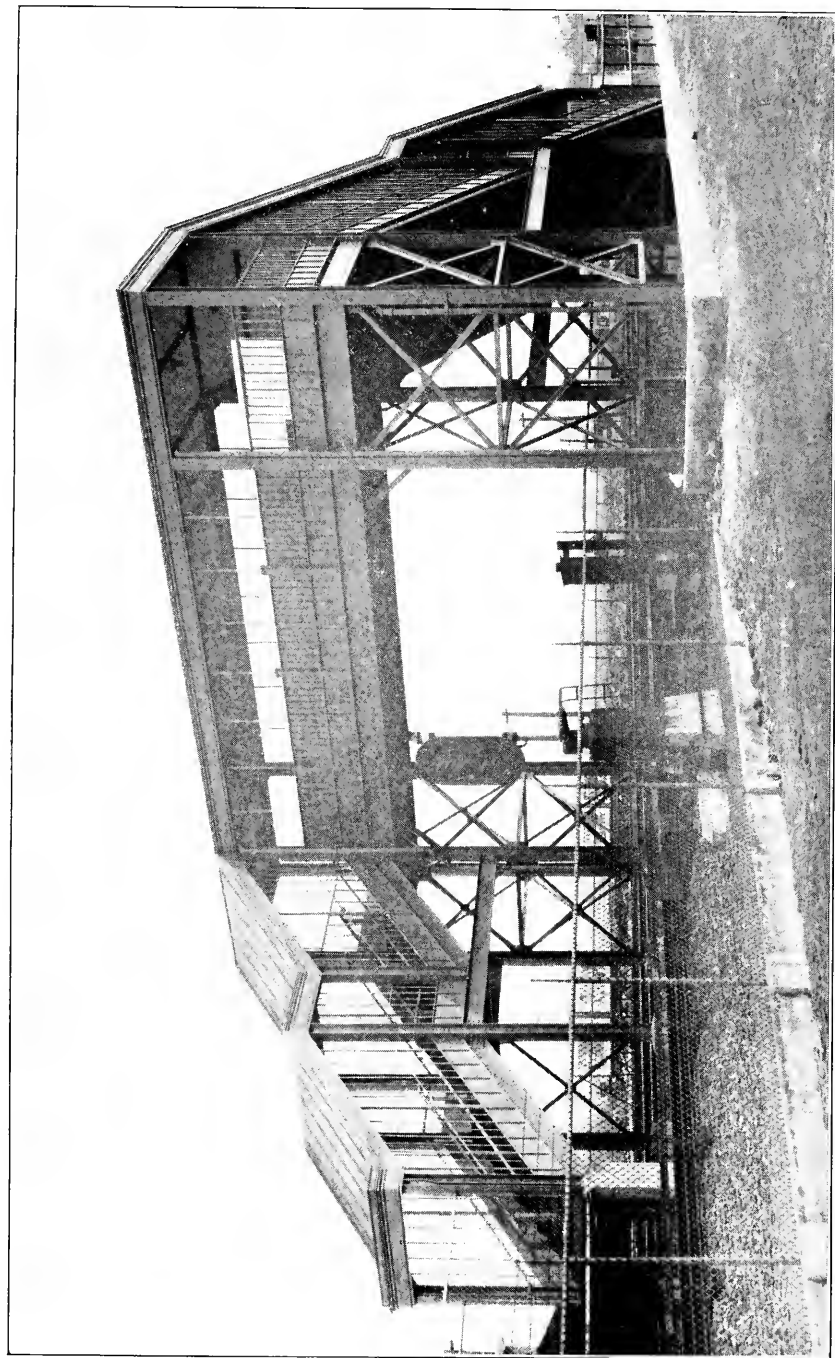


PLATE XIV.—COLUMBIA STATION OVERPASS.



reverses on a radius of 90 feet. At this curved platform edge, the end and middle overhangs of some of the larger cars now in use reduce the clearance between the car and five of the platform columns below the standard. Studies were made and detail drawings prepared for moving these columns farther back on the platform. New columns and additional roof beams were made and placed by ironworkers of the Department.

The work in each case required supporting the roof of the subway by two temporary steel columns, one on each side of the column to be removed; removing the old column, erecting the new column to support a new beam placed against the under side of the roof which acts as a cantilever, the short end supporting the roof where the old column was removed, the long end being held down by the weight of the roof to the west.

The Park Street Station is without doubt one of the busiest stations of its kind in the world and this work, in close proximity to tracks on two sides had to be done at night during the hours when few cars were passing. The work was further complicated by the necessity of cutting reinforced concrete for the new footing beams and of supporting the beams of one of the footings on roof beams of the Park Street Under Station, which is built directly below the Park Street Station of the Tremont Street Subway.

To date changes in location of two of the columns have been completed.

#### TRAFFIC TUNNEL

Immediately after the acceptance of the Act authorizing the Department to construct a vehicular tunnel between Boston Proper and East Boston, preliminary investigations, surveys and plans were started. Notes were taken on the condition of buildings along the line of several routes under consideration and surveying parties were put in the field in Boston and in East Boston. A triangulation survey across Boston Harbor is now under way and much of the area on both sides of the harbor has already been surveyed.

Studies and preliminary plans for various routes and types of tunnel construction were made. Estimates of cost of the various routes and approaches were also prepared. These estimates indicated that a single tube tunnel with suitable

approaches could be built within the appropriation. The single tube tunnel allows for a two lane roadway accommodating one line of traffic in each direction, and leaving sufficient width to permit of passing in the case of a disabled car.

A sidewalk will be provided on one side for use of police patrolling the tunnel. The equipment of the tunnel will consist of ventilating machinery, air ducts, etc., for the proper ventilation of an automobile tunnel, also power transmission lines, lighting, police and fire signals and necessary fire fighting apparatus. The ventilating machinery will be housed in buildings which are to be constructed one on each side of the harbor. An administration building will also be provided as well as the necessary machine shop and garage facilities for fire-fighting trucks.

The construction of the tube will be divided into sections, the two end sections to be constructed by the open cut method. The center section, which is by far the longest, being partly under land on each side and also under the harbor, will be built by the shield method using compressed air for most of its length. The open cut sections will be of reinforced concrete and structural steel construction. The shield section will have a welded steel lining which will be erected as the shield progresses. This lining will be designed to be self-supporting when the air pressure is removed. It is planned to protect the steel lining on the outside by a layer of cement grout forced under pressure into the space left behind the tail of the shield as it progresses. The tunnel itself will be of reinforced concrete construction of sufficient strength to carry the entire load. The roadway will be paved with granite blocks and the walls will have a tile finish. The length of the tunnel will be approximately one mile. Entrance and exit plazas will be provided to properly handle traffic and toll collections.

Application was made to both the Department of Public Works of the Commonwealth and to the United States War Department for permits for the location of the tunnel under the harbor. Permission was granted by the Department of Public Works on November 26, 1929, and by the War Department on December 2, 1929.

New plans are now being prepared showing a proposed change in alignment and it is expected that new applications for permits will be made early in the coming year.

## CYPHER STREET YARD

The yard has handled construction supplies and the shop has fabricated all structural steel used in the construction work on the various sections during the year. The handling of cement for testing, also the grouting work in the various subways has been done by the labor force from the yard. The work at the yard and shop has continued during the year under the direction of Assistant Engineer Samuel C. Lyman.

## TESTING MATERIALS

Inspection of materials and workmanship on all operations in connection with the construction on various sections has been carried on throughout the year by the Department inspectors. Mill and laboratory tests of materials have been made as in former years.

Reinforcing rods, structural steel rails and castings have been tested by the firm of Conard and Buzby.

Physical tests of the samples taken from every load of cement have been made by Mr. Charles N. Ryan, Cement Tester, Public Works Department.

Chemical and physical tests of waterproofing and asphalt have been made by Mr. Hiram Y. Waterhouse, Chemist, Public Works Department.

## ENGINEERING FORCE

The names of those members employed for more than one month are given in Appendix III.

Respectfully submitted,

ERNEST R. SPRINGER,  
*Chief Engineer.*

## APPENDIX I.

[CHAPTER 297, ACTS OF 1929.]

AN ACT TO PROVIDE FOR THE CONSTRUCTION OF A VEHICULAR TUNNEL  
BETWEEN BOSTON PROPER AND EAST BOSTON.

*Be it enacted, etc., as follows:*

SECTION 1. The city of Boston, hereinafter called the city, acting by the transit department of the city of Boston, hereinafter called the department, shall proceed with the laying out and construction of a tunnel which shall consist of two or more roadways or lanes for vehicular traffic contained in one or two tubes, with or without physical connection, under Boston harbor from a convenient point or points in Boston proper to a convenient point or points in that part of the city known as East Boston, and with the laying out and construction of all facilities and appurtenances incidental thereto, including plazas and street approaches extending not more than one thousand feet from the tunnel entrances or exits as the department shall deem necessary and desirable to facilitate the movement of traffic entering and leaving the tunnel. The word "tunnel" as used in this act shall connote the plural in so far as it may consist of two tubes with or without physical connection.

SECTION 2. The department shall immediately after the effective date of this act make such preliminary investigations, surveys and plans as it may deem expedient and to that end the department, its employees or any other parties acting with its authority may enter upon any lands, or places without being liable in trespass, in order to make surveys and investigations, and may place and maintain marks and monuments thereon, and make borings and excavations and do all other acts necessary for the preparation of plans and estimates for said tunnel and other facilities and appurtenances; provided, that compensation shall be recoverable from the city under chapter seventy-nine of the General Laws for any actual damages caused by such acts.

SECTION 3. The department may, for the purposes of this act, take and use without compensation public lands and ways, except any wharves, piers or other structures of the commonwealth or any land of the commonwealth above low water mark, and the department may, for the said purposes, acquire on behalf of the city by purchase or otherwise, or may take by eminent domain under chapter seventy-nine of the General Laws or any other alternative method now or hereafter provided by general law, lands in fee including buildings thereon, and easements, estates and rights in land, including the right to go under the surface thereof, or through or under buildings or parts of buildings thereon, or any leasehold rights, or other rights therein, or relative thereto; such takings in fee or otherwise may be made, whether the lands or other rights taken or otherwise affected are held under or by title derived by eminent domain or otherwise, and the



department may, for such purposes, acquire for the city by purchase or otherwise, or may take any property and rights of any kind deemed by it essential to the construction of said tunnel. A taking or purchase under this section of an easement or other estate or right in a given parcel of real estate or any right taken, whether such parcel or other right taken consists of unimproved land or of land and buildings or rights of any nature, may be confined to a portion or section of such parcel or right fixed by planes of division, or otherwise, below or above or at the surface of the soil and in such case no taking need be made of upper or lower portions, or other parts or sections thereof, except of such easements therein, if any, as the department may deem necessary. The department shall, so far as may be practicable, notify all known owners of such takings, but the validity thereof shall not be affected by want of such notice. Any person sustaining damage by reason of property or rights in property taken or injured by the department under authority of this act, except public lands and ways which may be taken and used without compensation as hereinbefore provided, shall be entitled to recover the same from the city under said chapter seventy-nine or under other provisions of law providing an alternative method of taking by eminent domain, as the case may be. The members of the department shall not be liable personally for any such damage. To such extent and under such conditions as the mayor of the city may from time to time determine, all action taken by the department under this section shall be with the written approval of the mayor.

SECTION 4. The department may sell the buildings or other structures upon any lands taken by it, or may remove the same, and shall sell, if a sale be practicable, or if not, shall lease, if a lease be practicable, any lands or rights or interests in lands or other property taken or purchased for the purposes of this act, whenever the same shall, in the opinion of the department, cease to be needed for the said purpose. The proceeds of any such sale or lease shall be used for the payment of costs of construction and after construction is completed shall be paid into the sinking fund hereinafter provided for.

SECTION 5. The department may order the removal or relocation of any surface tracks, and the removal or relocation of any conduits, pipes, wires, poles, or other property located in public ways or places, which it deems to interfere with the laying out, construction or operation of the tunnel and other facilities authorized by this act, and shall grant new locations for any such structure so removed or relocated. Such orders, to the extent specified therein, shall be deemed a revocation of the right or license to maintain such tracks, pipes, conduits, wires, poles, or other property in such public ways or places, and the owner of any such structures in public ways or lands shall comply with such orders without expense to the city. If any such owner shall fail to comply with the order of the department within a reasonable time, to be fixed in the order, the department may discontinue and remove such tracks, conduits, pipes, wires, poles, or other property, and may relocate the same, and the cost of such discontinuance, removal or relocation shall be repaid to the city by the owner. No such discontinuance, removal or relocation shall entitle the owner of the property thus affected to any damages on account thereof. Any such structure in or upon private lands may be removed and relocated

by the department, or, if removed and relocated by the owner thereof, the reasonable expense shall be repaid to him by the department. Any gas or electric lighting company shall shut off the gas or current from any pipes or wires affected by any acts done hereunder, so far and for such time as may be necessary to prevent the escape or explosion of gas, or other public danger. This section shall not apply to facilities on property of the commonwealth under the control of the department of public works or installed under licenses or permits granted by said department, except with its approval.

SECTION 6. The city may place in the tunnel such wires and apparatus as may be necessary for its police and fire alarm service, to be used, however, exclusively for such service and to be so placed as the department may determine, but this privilege shall not extend to water pipes, except such as may be needed for fire protection and other uses therein.

The department may place and maintain or may grant permission to any corporation or person to place and maintain within the tunnel ducts or other structures, to be so located as not to interfere with the safe and convenient operation and maintenance of the tunnel and other apparatus which the city is hereinbefore permitted to place therein, and may contract with any such person or corporation for such permission or for the use of such ducts or other structures at such annual rate of rental as may be fixed by the department. The construction, maintenance and repairs of any such ducts or other structures shall be subject to such directions and regulations as the department may impose.

SECTION 7. No contract for construction work or for the purchase of apparatus, supplies or materials, the estimated cost of which amounts to five hundred dollars or more, shall be awarded by the department under this act unless proposals for the same have been invited by advertisements in at least one newspaper published in the city once a week for at least two consecutive weeks, the last publication to be at least one week before the time specified for the opening of said proposals. Such advertisements shall state the time and place where plans and specifications of proposed work or supplies may be had and the time and place for opening the proposals in answer to said advertisements, and shall reserve to the department the right to reject any or all proposals. All such proposals shall be opened in public. No bill or contract shall be split or divided for the purpose of evading any provision of this section. All contracts made by the department hereunder, where the amount involved is five hundred dollars or more, shall be in writing, and no such contract shall be deemed to have been made or executed until the approval of the mayor is affixed thereto. Any contract made as aforesaid may be required to be accompanied by a bond with sureties satisfactory to the department, or by a deposit of money, certified check or other security for the faithful performance thereof, and such bonds or other securities shall be deposited with the city treasurer until the contract has been carried out in all respects; and no such contract shall be altered except by a written agreement of the contractor, the sureties on his bond and the department, with the approval of the mayor.

SECTION 8. For the purpose of meeting the cost of the tunnel, which shall include all expenses incurred in laying out and constructing the same

and all facilities and appurtenances incidental thereto, including plazas and street approaches as described in section one, and all land damages, expenses of the department, such proportion of the salaries of the department as may in its opinion be properly chargeable thereto and all interest accruing prior to the use of the tunnel on debt incurred for the foregoing, the treasurer of the city shall, from time to time, on request of the department, with the approval of the mayor of the city and without any other authority than that contained in this act, issue and sell at public or private sale the bonds of the city, registered or with interest coupons attached, as he may deem best, to an amount not exceeding sixteen million dollars. Such bonds shall be designated on their face, Traffic Tunnel Bonds, City of Boston, Act of 1929, shall be for such terms, not exceeding fifty years, as the mayor and the treasurer of the city may determine, and shall bear such interest, payable semi-annually, as the mayor and the treasurer of the city may determine. Such bonds may be called, retired and cancelled by the city on any date upon which interest is payable on said bonds after twenty years from their respective dates, by payment by the city of the amount of the face of said bonds with any accumulated unpaid interest, and the bonds shall contain a statement to such effect. The proceeds of such bonds shall be used only to meet the cost of the tunnel as hereinbefore defined. The debt incurred from time to time under the provisions of this act shall not be included in determining the limit of indebtedness of the city as established by law. The board of sinking fund commissioners of the city shall establish a sinking fund for the payment of the bonds issued under authority hereof. There shall annually be paid into such fund from tolls and charges or otherwise as hereinafter provided such sum at least as is necessary to provide for the payment of the principal of all such bonds at the expiration of fifty years from their respective dates; provided, that the first payment into said fund shall not be made prior to the expiration of one year after the entire tunnel is in operation. Upon and after the completion of the tunnel as aforesaid there shall also be paid into said fund the proceeds received from any sales or leases under section four and the balance of the proceeds of any bonds previously issued hereunder and no longer required for construction purposes.

All tolls, rents, percentages, compensation and other charges received for any use of the tunnel shall be used by the treasurer of the city only to meet the operating costs and, subject to the provisions of section twelve, the excess in any year of such tolls and charges over operating costs shall be paid into said fund.

SECTION 9. Upon the completion of the tunnel, the public works department of the city shall operate the same as a toll tunnel, and shall from time to time establish a schedule of tolls and charges for the use of the same, which, in the opinion of said public works department, subject to the approval of the department of public utilities, will pay all operating costs, which term wherever used in this act shall include charges for adequate maintenance and upkeep, operating expenses including therein proper policing, lighting, and ventilating, interest on all bonds issued under authority hereof, and such annual amounts as are necessary to provide a sinking fund for the payment of the principal of such bonds upon the expiration of such period of time, not less than twenty nor more

than fifty years after their respective dates, as said public works department, with the approval of the department of public utilities, shall from time to time determine. If in any year such schedule of tolls and charges should prove to be insufficient, the said public works department shall establish such tolls and charges as will provide sufficient revenue to meet any deficit; provided, that if in the opinion of the said public works department such new schedule of rates and charges would not result in an increase in revenue, then it may establish such new schedule of tolls and charges as it deems will produce the maximum revenue and any deficits resulting therefrom shall be met as provided in section eleven. All schedules of tolls and charges established under this section or under section twelve shall be subject to the approval of the department of public utilities. The said public works department shall collect such tolls and charges from the driver of each vehicle using said tunnel, and shall daily pay the same over to the city collector of Boston; provided, that no toll or charge shall be collected from the drivers of vehicles owned by the city or from drivers of ambulances.

SECTION 10. In addition to the full credit of the city, so much of all receipts from tolls and charges for or on account of the use of the tunnel as are required to be expended, by the provisions of this act, for the payment of the principal and interest of the bonds issued under section eight, as and when the same become due and payable, are hereby pledged to such payment; and said provisions are hereby declared to constitute contracts between the city and the holders of said bonds within the meaning of section ten of Article I of the constitution of the United States, and a recital thereof shall appear on the face of said bonds.

SECTION 11. If at any time during the operation of the tunnel the receipts from tolls and charges as established under section nine or twelve are insufficient to meet the operating costs, including for sinking fund requirements, however, only such amount as is required by section eight, the treasurer of the city is hereby authorized and directed to make payments on account of the same from any funds in the treasury of the city, including temporary tax loan funds but excluding trust funds. If for any year ending on the last day of June the operating costs, including for sinking fund requirements, however, only such amount as is required by section eight, exceed the receipts from such tolls and charges, the said treasurer shall notify the assessors of the city of the amount of such excess and the same amount shall be added to the amount to be raised by the city in the next annual tax levy. Any such amount shall be in excess of the limit imposed by law on the amount to be raised for municipal purposes by taxation in said city.

SECTION 12. Whenever as of the last day of June in any year the receipts from tolls and charges as established under section nine or under this section exceeds the operating costs, including sinking fund requirements on a basis of the payment of all bonds issued hereunder at the expiration of twenty years after their respective dates, said excess shall be transferred to the general funds of the city so far as necessary to reimburse it for any amounts raised by taxation under section eleven. If any such excess occurs after the city shall have been reimbursed in full for all amounts so raised by taxation, the public works department shall, subject

to the provisions of said section nine, establish a reduced schedule of tolls and charges, sufficient, however, to meet the operating costs.

SECTION 13. The department may engage such additional engineering employees as may in its judgment be required and are approved by the mayor of the city.

SECTION 14. The city shall have, hold and enjoy in its private or proprietary capacity, as its own property, the said tunnel and the same shall never be taken by the commonwealth except on payment of just compensation.

SECTION 15. This act shall take effect upon its acceptance on or before July first of the current year by vote of the city council of the city of Boston, subject to the provisions of its charter; but for the purpose only of such acceptance, it shall take effect upon its passage.

— *Approved May 9, 1929.*

## APPENDIX II.

---

[CHAP. 383.]

## AN ACT RELATIVE TO TRANSPORTATION FACILITIES IN THE METROPOLITAN DISTRICT.

*Be it enacted, etc., as follows:*

SECTION 1. The territory within and the inhabitants of the following cities and towns, to wit: Arlington, Belmont, Boston, Brookline, Cambridge, Chelsea, Everett, Malden, Medford, Milton, Newton, Revere, Somerville and Watertown, shall constitute a district or incorporated municipality, and for the purposes of this act are made a body politic and corporate under the name of the metropolitan transit district, hereinafter called the district, with power to take and hold property, sue and be sued in law and equity, to prosecute and defend in all actions relating to the property and affairs of the district, and of contracting and doing other necessary acts relative to its property and affairs; and said territory and inhabitants shall be jointly and severally liable for the debts and obligations thereof. Said district shall have a corporate seal. Process may be served upon the treasurer of the district as hereinafter provided.

The real estate of the district, with the exception of that used for tunnels, subways, stations, transfer areas, rapid transit lines and their appurtenances, shall be subject to taxation by the city or town in which it is located in the same manner and to the same extent as if privately owned.

SECTION 2. The affairs of the district shall be managed by a board of five trustees, hereinafter called the trustees, of whom four shall be appointed by the governor, with the advice and consent of the council, to serve for terms of two, four, six and eight years, respectively, as the governor shall designate, from the date of their appointment, and of whom one shall be appointed by the mayor of the city of Boston, to serve for a term of two years from the date of his appointment. As the term of office of a trustee appointed by the governor expires, his successor shall be appointed by the governor, with like advice and consent, for a term of eight years, and as the term of office of a trustee appointed by the mayor expires, his successor shall be appointed by the mayor for a term of two years. All trustees appointed hereunder shall hold office until the qualification of their successors and shall serve without compensation. Any vacancy in the office of a trustee shall be filled, for the unexpired term, by the governor, with like advice and consent, or by said mayor, as the case may be. Said trustees shall be sworn by the governor or by the state secretary. Any trustee may be removed for cause by the governor with like advice and consent. The trustees shall elect one of their own number as chairman. The trustees shall adopt a corporate seal for the district, and designate the custodian thereof. A majority of the trustees shall constitute a quorum for the transaction of any business, and the action of

a majority of the entire membership shall be required for any affirmative action. The trustees may from time to time appoint and at pleasure remove a clerk, treasurer and such agents and employees for the district as they may deem necessary, and may determine their duties and their compensation, which shall be paid by the district; shall cause at all times accurate accounts to be kept of all expenditures of the funds of the district; and shall make an annual report, containing an abstract of such accounts, to the general court and to the metropolitan transit council. The offices of treasurer and clerk may be held by the same person. Except as herein otherwise provided, they shall have full authority to represent the district, to have the care of its property and the management of its business and affairs, and to sell and convey any real estate or other property not needed for its business or affairs, by deed sealed with the district seal, signed and acknowledged by a majority, or in like manner to authorize such sale and conveyance by the metropolitan transit department. The treasurer shall give bond for the faithful performance of his duties with a surety company authorized to do business in this commonwealth as surety, in such sum as the trustees may determine. The civil service laws and rules shall not apply to the appointment or removal of the clerk, treasurer or other agents or employees of the district or to the commissioners of the metropolitan transit department but shall continue to apply to employees of the transit department of the city of Boston if and when transferred to the metropolitan transit department under the provisions of this act; nor shall the provisions of chapter four hundred and eighty-six of the acts of nineteen hundred and nine and acts in amendment thereof and addition thereto apply to appointments of the mayor of Boston made under the provisions of this act. Sections fifty-six to sixty, inclusive, of chapter thirty-two of the General Laws shall apply to all employees of the transit department of the city of Boston so transferred with the same credit for term of service as though such transfer were not made, and all employees of said transit department of the city of Boston who are members of the Boston retirement system, established by chapter five hundred and twenty-one of the acts of nineteen hundred and twenty-two, shall be entitled to retain their membership therein and to continue to enjoy the benefits thereof. The district shall make like deductions from the pay of such members as provided in said chapter five hundred and twenty-one and shall pay the same to the retirement board provided therein together with the normal annual contribution to the compensation accumulation fund which would otherwise be made by the city of Boston. Any expenses lawfully incurred under this section or under section thirteen or fourteen shall constitute part of the current expenses of the district.

SECTION 3. The metropolitan transit council, hereinafter called the council, is hereby established to consist of the mayors and chairmen of the boards of selectmen of all cities and towns of the district. The council shall annually organize by the election of a chairman and a secretary. In voting in the council each mayor and chairman of a board of selectmen shall have one vote for each one hundred million dollars, or fraction thereof, of the amount of property as last previously established by the general court for their respective cities and towns as a basis of apportion-

ment for state and county taxes, and action shall be only by a two thirds vote of the total number of votes so authorized. All votes authorized by this act to be taken by the council in behalf of the district shall be signed by the chairman and secretary of the council and filed with the state secretary.

For the purpose of certifying such votes, the custodian of the corporate seal of the district as designated under section two shall by direction of the chairman of the council affix the seal thereto in behalf of the district.

Any of said mayors or chairmen may from time to time designate any registered voter of his city or town as his proxy to attend any or all meetings of said council, with all the powers which he would have if personally present, provided, that such designation is by a writing which is signed by such mayor or chairman, filed with the state secretary and has endorsed thereon the certificate of a registrar of voters of such city or town that the person designated is a registered voter thereof, and that a copy of such designation certified by said state secretary is filed with the secretary of the council.

SECTION 4. Upon the acceptance of section eight as therein provided, the metropolitan transit department shall be established and shall consist of a commissioner and two associate commissioners. The commissioner shall be appointed by the governor, with the advice and consent of the executive council, and two associate commissioners, by the mayor of the city of Boston. The initial appointees shall serve for terms of five years each from the first day of the month following that on which this section takes effect. Upon the expiration of their terms of office, their successors shall be appointed, for terms of five years each, in the manner following:—the commissioner, by the governor, with like advice and consent; one associate commissioner, by said mayor; and the other associate commissioner, by the trustees. As their terms expire, their respective successors shall be appointed in like manner for terms of five years each. All appointees hereunder shall serve until the qualification of their successors and any vacancy in the office of commissioner or associate commissioner shall be filled for the unexpired term in the same manner as such commissioner or associate commissioner was appointed. The commissioner shall receive such salary as the governor, with the approval of said council, shall from time to time establish. Each of the associate commissioners shall receive such salary, not exceeding five thousand dollars per annum, as the governor and executive council may establish. The commissioner and associate commissioners shall be subject to removal for cause by the governor with the advice and consent of said council. The action of a majority of the department shall be deemed the action of the department provided that no affirmative action shall be taken in which the commissioner does not concur. The chairman of the trustees shall be entitled to notice of and to attend all meetings of said department, and to participate in all discussions, relative to matters in which the district is interested, but shall not be entitled to vote. Until such time as the said commissioner and associate commissioners shall be appointed and shall qualify the chairman and the two associate commissioners of the transit department of the city of Boston holding office on the effective date of this section shall constitute the department created thereby.



SECTION 5. Upon the establishment of the metropolitan transit department, all the powers, privileges, duties, restrictions and liabilities transferred to the city of Boston by chapter one hundred and eighty-five of the Special Acts of nineteen hundred and eighteen, and all the powers, privileges, duties, restrictions and liabilities thereafter conferred or imposed upon the city of Boston to be exercised by the transit department of the city of Boston or conferred or imposed upon said transit department to be done or performed in the name or on behalf of the city of Boston, shall be transferred to and conferred and imposed upon said metropolitan transit department, and after such transfer all leases, contracts, takings and other acts relating to subways, tunnels, rapid transit extensions or alterations or extensions thereof, including the Cambridge-Main street subway, then in existence or theretofore authorized, shall be in the name and behalf of the district and bonds of the district shall be issued to pay for the completion of all work thereon then under construction; but all contracts, takings and other acts authorized by chapter two hundred and ninety-seven of the acts of nineteen hundred and twenty-nine or acts amendatory thereof shall be in the name and behalf of the city of Boston and the treasurer of the city of Boston shall from time to time, on request of the metropolitan transit department, issue and sell bonds of the city and apply the proceeds thereof in accordance with the provisions of said chapter two hundred and ninety-seven.

SECTION 6. The metropolitan transit department in behalf of the district shall, upon its establishment as provided in section four, take over the records, books, plans, files and equipment and the present organization, including engineers and other employees of the transit department of the city of Boston as of the date of such establishment, shall complete all work then under construction or authorized, shall prepare under direction of the trustees plans for additional rapid transit lines and, when and as construction thereof is authorized, shall construct the same in accordance with plans approved by the trustees. Except as otherwise expressly provided herein all purchases or takings by right of eminent domain of property for construction purposes authorized by this act in behalf of the district shall be made by said metropolitan transit department. The salaries, expenses and obligations of the metropolitan transit department shall be paid by the district, except as herein provided.

The metropolitan transit department shall make such investigations and reports and do such other work as may be directed by other or later acts or resolves, and shall continue and complete all work which the transit department of the city of Boston has been authorized or directed to undertake, but the cost thereof, and such proportion of the salaries of the commissioner and associate commissioners and expenses of the metropolitan transit department as it may determine to be properly chargeable thereto, shall be charged as a part of the cost of such work and paid from the proceeds of the bonds issued therefor or by the commonwealth after an appropriation has been made or by the city, town or other body for or in whose behalf the same is made or done.

SECTION 7. For the purpose of carrying out the provisions of this act the metropolitan transit department in behalf of the district shall have like powers with respect to the work herein or hereafter authorized as

were granted to the Boston transit commission under chapter five hundred and forty-eight of the acts of eighteen hundred and ninety-four, and chapter seven hundred and forty-one of the acts of nineteen hundred and eleven and acts in amendment thereof and in addition thereto, with respect to works authorized by said chapters.

SECTION 8. Upon acceptance of this section by the city of Boston, acting by the mayor and city council thereof, who are hereby authorized to accept the same in behalf of said city by filing a written acceptance thereof with the state secretary, all right, title and interest of the city of Boston in the Tremont street subway, so-called, the East Boston tunnel, the Washington street tunnel, the tunnel of the Cambridge connection, so-called, the Dorchester tunnel, the Boylston street subway, the East Boston tunnel extension, the Arlington street station, the Maverick square station and extension of the East Boston tunnel, the extension of rapid transit facilities in the Dorchester district, and in all subways, tunnels, stations, rapid transit facilities, and alterations, extensions, appurtenances and equipment thereof, and connections therewith, then existing or under construction, title to which is in said city, hereinafter called the "properties", shall by virtue hereof and of such acceptance be transferred to and vested in said district, subject to existing contracts for the use of the same by the Boston Elevated Railway Company, and the district in consideration thereof shall be obligated and bound to indemnify and hold harmless the city of Boston from any payment required on account of bonds issued or obligations incurred on account thereof, which are not met by rentals heretofore or hereafter received therefor, or the sinking fund or funds and accumulations thereof created under the various statutes authorizing the construction thereof, but nothing hereunder shall in any way affect the obligation of the city of Boston to pay as hereinafter provided its part of the expenses and obligations of the district, including those arising under this section, and also shall be obligated and bound to indemnify and hold harmless said city against the obligations of said contracts for use. Upon request by the trustees the treasurer of the city of Boston shall forthwith pay to the treasurer of the district all unexpended balances remaining from the sale of bonds issued under authority of the various acts authorizing the construction of the properties or issued for the purpose of providing funds for the construction, equipment, alteration, extension or improvement thereof, which amounts shall be used by the district for the purposes for which the same were issued or for completing the construction authorized by chapter four hundred and eighty of the acts of nineteen hundred and twenty-three.

The district shall be entitled to receive the rentals payable under the then existing or any future leases or contracts for use of said properties or extensions thereof and to enjoy and enforce all the rights of said city thereunder. In further consideration for such transfer the district shall be bound to pay to the city of Boston such amounts as are required to meet the interest upon all bonds of the city issued to pay the net cost of the properties so transferred as defined in the various acts authorizing their construction, as and when the same is due, increased in each instance by one half of one per cent of the principal of the bonds upon which interest is due, which increase shall be paid into the sinking funds for said bonds

in the same manner as provided by said acts with reference to the rentals now payable to the city. All rentals received by the district on account of said properties shall be used only for making said payments to the city or paid into a fund to be invested and reinvested but to be used for that purpose when and as needed or to pay the principal when due of any of said bonds for which the sinking fund held by the city is insufficient, but not otherwise. As any bonds of the city issued on account of the properties transferred fall due, if the amount available in the sinking funds is insufficient to pay the same the district shall pay to the city the amount of such deficiency, and the district may issue bonds in accordance with the provisions of section ten to provide the necessary funds therefor. When a sinking fund sufficient to pay all of said bonds has been accumulated payment of said increase of one half of one per cent shall cease. Any balance remaining in the sinking funds on account of said bonds after all have been paid shall be paid by the city to the district.

SECTION 9. If and when section eight is accepted by the city of Boston, as therein provided, title to the Cambridge-Main street subway and lines of railway used in connection therewith and their appurtenances, and all alterations and extensions thereof, including therein all property acquired or constructed by the commonwealth under chapter three hundred and sixty-nine of the General Acts of nineteen hundred and nineteen, and chapter four hundred and eighty-three of the acts of nineteen hundred and twenty-two, then owned by the commonwealth, shall thereupon by virtue hereof be transferred to the district, subject to contracts for the use of the same by the Boston Elevated Railway Company, together with the benefit of and subject to all the liabilities of said contracts, and the district shall perform and observe all covenants and conditions in said contracts on the part of the commonwealth to be performed or observed, and shall indemnify the commonwealth against the obligations thereof.

The district shall be entitled to receive the rentals, payable under the then existing or any future contracts, for the use thereof and to enjoy and enforce all rights of the commonwealth thereunder. In consideration for such transfer, the district shall be bound to pay to the commonwealth such amounts as are required to meet the interest and principal of all bonds of the commonwealth, issued on account of the purchase or construction of the property transferred by this section, as and when the same are due. Any amounts so paid by the district which are not met within one year by said rentals, shall be certified and raised as provided in section twelve except that any amount paid by the district on account of the principal of the latest maturing of each issue of bonds of the commonwealth may be paid from the proceeds of bonds to be issued by the district in the manner provided in section ten. All rentals received by the district on account of the properties transferred by this section shall be used only for making said payments to the commonwealth or paid into a fund to be used only for that purpose.

If and when section eight is accepted by the city of Boston as aforesaid, all the powers, privileges and duties, which were conferred or imposed upon the commission of the department of public utilities by said chapter three hundred and sixty-nine and by the contract for use of the Cambridge-Main street subway executed thereunder, and by chapter one hundred and forty-six of the acts of nineteen hundred and twenty-six amending

said chapter three hundred and sixty-nine and by chapter four hundred and forty-four of the acts of nineteen hundred and twenty-four, providing for the construction and use of an additional station at or near the junction of Cambridge and Charles streets, shall thereupon by virtue hereof be transferred to and conferred and imposed upon the district to be exercised by the metropolitan transit department; provided, that thereafter, leases, contracts, takings and other acts shall be in the name of the district instead of the commonwealth and bonds of the district instead of the commonwealth shall be issued to pay for the cost and expense incident to the work authorized.

SECTION 10. The trustees shall from time to time and without further authorization than herein contained, issue and sell at public or private sale bonds of the district, registered or with interest coupons attached as they may deem best, to an amount not exceeding, in the aggregate, the total cost of carrying out the provisions of this act; provided, that said trustees may also from time to time issue and sell bonds for the purpose of calling or refunding prior bonds issued under the provisions of this section. Said bonds shall be signed by a majority of the trustees or by such person or persons as may be designated from time to time for such purpose in a writing signed by a majority of the trustees and filed with the state secretary. Such bonds shall be designated on their face "Metropolitan Transit District Bonds", and shall be for such terms not exceeding sixty years, and shall bear interest payable semi-annually at such rates as said trustees, subject to the approval of the department of public utilities, shall from time to time determine. Indebtedness incurred under the provisions of this act shall not be included in determining the statutory limit of indebtedness of any of the cities or towns constituting the district. The proceeds of such bonds, including any premiums realized from the sale thereof, shall be used to meet all damages, costs and expenses incurred by the district in carrying out the provisions of this act.

The trustees, in behalf of the district, may temporarily borrow money and issue notes of the district therefor in anticipation of the issue of bonds, or of receipts from taxation, or of income to be received, or to provide for the payment of any obligations when due, for which funds are not available. No purchaser of such bonds or lender upon such notes shall be bound to see to the application of the money paid or loaned.

The trustees may appoint a national bank or trust company to act as agent to register any bonds or notes of the district issued under the authority of this act, and may provide for such certification thereof as they deem advisable. Any expense so incurred shall constitute a part of the current expenses of the district.

All bonds and notes of the district issued under authority of this or any subsequent act shall be exempt both as to principal and income from all taxes levied by or under authority of the commonwealth, and shall be a legal investment for the deposits and the income derived therefrom of savings banks incorporated in the commonwealth.

SECTION 11. Except as provided in sections eight and nine, all rentals or other compensation for the use of property acquired by the district and payments from taxation on account thereof, received by the district, shall be used, in the first instance, for the payment of interest on the bonds of the district issued for the acquisition of the property on account of

which such monies are received, and the balance shall be used to create a sinking fund for such bonds, and any further balance shall be paid into a general sinking fund for all bonds of the district. The proceeds of any sale or sales of such property shall likewise be paid into such sinking funds. Sinking funds may be invested in any bonds of the district and any bonds so acquired shall be kept alive therein. Except as aforesaid, such sinking funds shall be invested only in securities which are legal investments for Massachusetts savings banks.


SECTION 12. On or before the fifteenth day of June in each year the trustees shall certify to the state treasurer the estimated amount required for the current expenses of the district for the ensuing year beginning on July first, together with the amounts to be raised by taxation as authorized or directed by this or subsequent acts to be so raised and shall also certify the amount required to meet any lawful obligations of the district for which payment is not otherwise provided, or to pay any judgments, or notes issued to provide funds for payment of any judgments, for which bonds could not be issued. The total of said amounts shall be apportioned by the state treasurer among the several cities and towns included in the district in proportion to the amount of property as last previously established by the general court for said cities and towns as a basis of apportionment for state and county taxes. The trustees shall, in like manner, certify to the state treasurer the amounts to be paid by any city or town for or in whose behalf any work has been done by the metropolitan transit department and for which the district has not otherwise been reimbursed. The state treasurer shall add the amounts found by him to be due from each of said cities and towns to the state tax next thereafter to be collected, and said cities and towns shall be notified of such amounts and they shall be collected in the same manner as other state taxes assessed upon said cities and towns. Said amounts shall be paid over by the state treasurer to said district when collected by the state treasurer.


SECTION 13. The trustees shall consider and investigate relative to the construction of new subways, tunnels and rapid transit routes and alterations, additions and extensions of existing routes in the metropolitan district, and of works incidental thereto. They shall also investigate relative to the most equitable methods of financing such improvements and of apportioning the cost thereof. They shall consider the question of acquiring the Chelsea division of the Eastern Massachusetts Street Railway Company, and shall negotiate with the owners of the property of said division relative to the terms and conditions on which it may be acquired. They shall submit their findings and recommendations in relation to the foregoing matters to the council and the council, upon approval thereof by a two-thirds' vote of its entire membership, shall submit the same to the general court.


SECTION 14. The metropolitan transit department, and prior to its establishment, the transit department of the city of Boston, at the expense of the district, when requested by the trustees, shall make such preliminary investigations, surveys and plans for subways, rapid transit routes or other work, which the district or said department on its behalf is hereafter authorized to construct, as the trustees may deem expedient and to that

end either department, its employees or any other parties acting with its authority may enter upon any lands or places without being liable in trespass, in order to make surveys and investigations, and may place and maintain marks and monuments thereon, and make borings and excavations and do all other acts necessary for such investigations and surveys and the preparation of plans and estimates therefor; provided, that compensation shall be recoverable from the district under chapter seventy-nine of the General Laws for any actual damages caused by such acts.

SECTION 15. At the biennial state election in nineteen hundred and thirty, the registered voters of the cities of Boston, Cambridge, Chelsea, Everett, Malden, Medford, Newton, Revere and Somerville and the towns of Arlington, Belmont, Brookline, Milton and Watertown shall be entitled to vote upon the following plans for determining the future ownership, management and operation of the railway system of the Boston Elevated Railway Company, which shall be printed upon the official ballot to be used in said municipalities at said election, in the form hereinafter set forth. Each voter shall make a cross in the space at the right of the plan which he desires to have adopted. No ballot shall be counted upon which the voter has made a cross in more than one such space.

*Plan No. 1.* Return to the Boston Elevated Railway Company of the management and operation of its railway system by terminating public management and operation 

*Plan No. 2.* Continuation of public management and operation of the Boston Elevated Railway Company in accordance with such terms and conditions as may be agreed to by the stockholders of said company. 

*Plan No. 3.* Purchase by the Metropolitan Transit District (which comprises the cities of Boston, Cambridge, Chelsea, Everett, Malden, Medford, Newton, Revere and Somerville and the towns of Arlington, Belmont, Brookline, Milton and Watertown), of the whole assets, property and franchises of the Boston Elevated Railway Company, the same thereafter to be owned, managed and operated by said district. 

The votes upon the foregoing plans shall be received, sorted, counted and declared, and copies of records thereof transmitted to the state secretary, laid before the governor and council, and by them opened and examined, in accordance with the laws relating to votes for state officers and copies of records thereof, so far as such laws are applicable. The governor shall transmit a written statement of the result of such votes to the general court during the first week of its session in the year nineteen hundred and thirty-one.

SECTION 16. Sections one, two, three and ten to sixteen, inclusive, shall take effect upon their passage. Sections four to nine, inclusive, shall take effect upon the acceptance of section eight, as therein provided by the mayor and city council of the city of Boston, but for the purposes of such acceptance shall take effect upon their passage.

*Approved June 8, 1929.*

## APPENDIX III.

The names of those who have been employed in the Engineering Division for more than one month during the period covered by this report are given below, together with an indication of the principal work upon which they have been engaged.

WILBUR W. DAVIS, *Assistant Chief Engineer*. In general charge of construction.

LEONARD B. HOWE, *Designing Engineer*. In general charge of designing.  
*Assistant Engineers.*

THOMAS N. ASHTON. Designs and details for structural steel, Dorchester Rapid Transit. Studies, East Boston Traffic Tunnel.

JOHN A. BERRIGAN. Track alignment calculations, land takings, detail plans, etc., Dorchester Rapid Transit. Alignment calculations, East Boston Traffic Tunnel.

THOMAS A. BERRIGAN. Plans and designs for reinforced concrete and steel work, Dorchester Rapid Transit. Studies, East Boston Traffic Tunnel.

RALPH F. BOUDREAU. Lines and grades, Section 5B; Surveys, Section 5C, Dorchester Rapid Transit.

JAMES D. BURNS. Plans and designs for steel work, Dorchester Rapid Transit and Park Street Station column changes.

HARRY T. CARROLL. Track alignment calculations, land takings, detail plans, etc., Dorchester Rapid Transit. Surveys, East Boston Traffic Tunnel.

STANLEY J. CLIFFORD. Track alignment calculations and detail plans, Dorchester Rapid Transit. Surveys, East Boston Traffic Tunnel.

JOHN J. CUMMINGS. Track alignment calculations and detail plans, Dorchester Rapid Transit. Alignment calculations, East Boston Traffic Tunnel.

LESTER S. DANIELS. Supervision of lines, grades and estimates, Dorchester Rapid Transit.

JOSEPH P. DEVER. Studies, specifications and estimates for Dorchester Rapid Transit. Studies, East Boston Traffic Tunnel.

ROBERT B. FARWELL. Supervision of construction of Section 5A, Dorchester Rapid Transit and of surveys, East Boston Traffic Tunnel.

RALPH A. FISHER. Designs and details of structural steel, Dorchester Rapid Transit.

LOUIS J. HARRIGAN. Studies and detail plans for sewers for Dorchester Rapid Transit and East Boston Traffic Tunnel.

HERBERT D. HURLEY. Design and details for structural steel and reinforced concrete and ventilation tests for Dorchester Rapid Transit; studies for ventilation buildings, East Boston Traffic Tunnel.

JOHN M. KENNEY. Plans and details for Dorchester Rapid Transit. Studies, East Boston Traffic Tunnel.

- WILLIAM W. LEWIS. Supervision of construction, Sections 1 and 5C, Dorchester Rapid Transit.
- BENJAMIN A. LOVELAND. Designs and details for structural steel and reinforced concrete structures, Dorchester Rapid Transit and East Boston Traffic Tunnel.
- SAMUEL C. LYMAN. In charge of stockyard and steel shop at Cypher Street.
- ARTHUR V. LYNCH. Supervision of track alignment calculations, taking plans, designs and detail plans for Dorchester Rapid Transit. Studies, East Boston Traffic Tunnel.
- HARRY H. LYNN. Plans and details, Dorchester Rapid Transit and East Boston Traffic Tunnel.
- HARRY F. SAWTELLE. Supervision of designs and details for structural steel and reinforced concrete structures, Dorchester Rapid Transit and East Boston Traffic Tunnel.
- HERBERT R. STEARNS. Supervision of track alignment calculations, taking plans, designs and detail plans for Dorchester Rapid Transit. Studies, East Boston Traffic Tunnel.
- LEO S. STONE. Supervision of escalator alterations. Studies, estimates and specifications for construction, Dorchester Rapid Transit. Supervision of specifications and contracts for equipment, Dorchester Rapid Transit. Estimates and specifications, East Boston Traffic Tunnel.
- EDWARD SULESKY. Designs and details for structural steel and reinforced concrete structures for Dorchester Rapid Transit. Studies, East Boston Traffic Tunnel.
- ARTHUR W. VOSE. Track alignment calculations, taking plans, detail plans, etc., Dorchester Rapid Transit. Alignment calculations, East Boston Traffic Tunnel.
- DAVID B. WEDEN. Designs and details for structural steel and reinforced concrete structures for Dorchester Rapid Transit. Studies, East Boston Traffic Tunnel.

*Assistant Engineer and Inspector.*

- FREDERICK C. H. EICHORN. Supervision of construction of Section 5B; surveys, Sections 5B and 5C, Dorchester Rapid Transit.

*Draftsmen.*

- EDMUND A. BARRETT. Lines and grades, Sections 1 and 5A. Surveys, Sections 5B and 5C, Dorchester Rapid Transit.
- BORIS BERESTNEFF. Plans and details for steelwork, Dorchester Rapid Transit. Plans and details, East Boston Traffic Tunnel.
- ROBERT D. GARDNER. Plans and details for steelwork, Dorchester Rapid Transit. Plans, East Boston Traffic Tunnel.
- IRWIN J. HENNESSY. Plans and details for structures, Dorchester Rapid Transit. Plans, East Boston Traffic Tunnel.
- JOHN F. HOWARD. Plans and details for Dorchester Rapid Transit. Plans, East Boston Traffic Tunnel.
- FRANCIS MAHONEY. Plans, East Boston Traffic Tunnel.
- RALPH A. PLUNKETT. Plans and details for Dorchester Rapid Transit. Plans, East Boston Traffic Tunnel.



- HARRY W. POULAS. Plans, East Boston Traffic Tunnel.  
KARL R. SAUNDERS. Plans and details for Dorchester Rapid Transit.  
Plans, East Boston Traffic Tunnel.  
FRANCIS W. VOGEL. East Boston Traffic Tunnel.

*Transitmen.*

- ROBERT S. BOWES. Lines and grades, Section 5B. Survey Section 5C, Dorchester Rapid Transit.  
PATRICK H. BOYLE. Lines and grades, Sections 1, 4, 5B, 5C, Dorchester Rapid Transit.  
THOMAS E. CARNEY. Lines and grades, Sections 5B and 5C, Dorchester Rapid Transit. Surveys, East Boston Traffic Tunnel.  
MICHAEL J. DRISCOLL. Lines and grades, Sections 4, 5A, 5B and 5C, Dorchester Rapid Transit. Surveys, East Boston Traffic Tunnel.  
MICHAEL S. FOGARTY. Quantities for estimates, Sections 4, 5A, 5B and 5C, Dorchester Rapid Transit.  
JOSEPH A. KOMICH. Surveys, East Boston Traffic Tunnel.  
ALBERT I. McDERMOTT. Plans and details for Dorchester Rapid Transit. Plans, East Boston Traffic Tunnel.  
FRANK A. RULL. Photography and blueprinting.  
FREDERIC W. STILES. Care of plans, survey records, etc., general office work.

*Rodmen.*

- BENJAMIN M. BOHRER. Surveys, East Boston Traffic Tunnel.  
CHARLES T. DINNEEN. Surveys, East Boston Traffic Tunnel.  
LAWRENCE P. DONNELLY. Lines and grades, Sections 1, 5A and 5B, Dorchester Rapid Transit.  
CHARLES W. FAGAN. Surveys, East Boston Traffic Tunnel.  
PAUL F. FORD. Section 5C, Dorchester Rapid Transit. Surveys, East Boston Traffic Tunnel.  
HERBERT C. HAWKINS. Plans, East Boston Traffic Tunnel.  
CHARLES M. MARTELL. Surveys, East Boston Traffic Tunnel.  
JAMES A. O'ROURKE. Lines and grades, Sections 5A, 5B and 5C, Dorchester Rapid Transit; Surveys, East Boston Traffic Tunnel.  
\* RAYMOND V. PAGE. Lines and grades, Sections 5B and 5C, Dorchester Rapid Transit.

*Inspectors and Others.*

- THOMAS H. ARMSTRONG. Inspection, Sections 5A, 5B and 5C, Dorchester Rapid Transit.  
HAROLD M. BRADBURY. Inspection 5A, 5B and 5C, Dorchester Rapid Transit.  
JOHN DOHERTY. Inspection, Sections 5A and 5B, Dorchester Rapid Transit.  
JAMES F. DRISCOLL. Inspection, Sections 1, 5B and 5C, Dorchester Rapid Transit.  
WILLIAM J. DRUMMOND. Inspection, Sections 4, 5A and 5B, Dorchester Rapid Transit.

---

\* Left the employ of the Transit Department.

JOHN J. FALLON, JR. Inspection, Sections 3, 4, 5A, 5B and 5C, Dorchester Rapid Transit.

JOHN L. GEOGHEGAN. Inspection, Sections 3, 5A and 5C, Dorchester Rapid Transit.

JOSEPH JOLLEY. Inspection, Sections 5A and 5B, Dorchester Rapid Transit.

AUSTIN E. JOYCE. Grouting in various tunnels and subways, Dorchester Rapid Transit.

THOMAS H. KEENAN. Grouting in various tunnels; Inspection, Section 5B, Dorchester Rapid Transit; Surveys, East Boston Traffic Tunnel.

STEPHEN V. McHALE. Inspection, Sections 5A and 5B, Dorchester Rapid Transit.

EMANUEL N. REINHALTER. Inspection, Section 5A, 5B and 5C, Dorchester Rapid Transit.

JOSEPH E. REINHALTER. Inspection, Sections 1, 3, 4, 5A, 5B and 5C, Dorchester Rapid Transit; Section 3, Tremont Street Subway.

GEORGE E. SULLIVAN. Construction accounts.

JAMES E. WARD. Inspection, Sections 5A, 5B and 5C, Dorchester Rapid Transit; Surveys on East Boston Traffic Tunnel.

*Clerical Force.*

JOHN J. BRADLEY. Clerk. Timekeeping and daily reports, Dorchester Rapid Transit.

KATHERINE I. DRISCOLL. Clerk and Stenographer.

JOHN J. FARREN. Construction Cost Accountant.

MARY E. McKERNAN. Clerk.

MABEL A. MURPHY. Stenographer.

THOMAS J. MULDOON. Clerk and Stenographer at Cypher Street Stockyard.

HENRY F. HORADAN. Blueprinting.

WILLIAM J. SKIFFINGTON. Blueprinting, photography, etc.

\* RICHARD F. TOBIN. Field work, Section 1 and 5C, Dorchester Rapid Transit; East Boston Traffic Tunnel.

---

\* Left the employ of the Transit Department.

## APPENDIX IV.

BIDS FOR FURNISHING AND DELIVERING 140 TONS, MORE OR LESS, OF  
STRUCTURAL STEEL, JANUARY 14, 1929.

BIDDER.	Estimated Price.	Time.
Bethlehem Steel Company *.....	\$6,756 25	45 days

\* Awarded. Contract 926.

## APPENDIX V.

BIDS FOR FURNISHING AND DELIVERING MALLEABLE IRON CASTINGS.  
FEBRUARY 11, 1929.

BIDDER.	Estimated Price.	Time.
Eastern Malleable Iron Company.....	\$12,502 00	60 days
Laconia Car Company.....	11,594 00	60 "
Albany Malleable Iron Company *.....	11,319 60	90 "

\* Awarded. Contract 927.

## APPENDIX VI.

BIDS FOR FURNISHING AND DELIVERING LONG LEAF YELLOW PINE TIES.  
FEBRUARY 11, 1929.

BIDDER.	Estimated Price.	Time.
George McQuesten Company.....	\$19,235 00	60 days
Leatherbee Company.....	16,887 40	60 "
Apex Equipment Company.....	16,866 65	140 "
New England Wood Preserving Company..	16,620 15	90 "
Atlantic Tie and Timber Company *.....	16,060 00	90 "

\* Awarded. Contract 928.

## APPENDIX VII.

BIDS FOR FURNISHING AND DELIVERING SPECIAL TRACKWORK FOR HIGH SPEED TROLLEY LINE, DORCHESTER RAPID TRANSIT. MARCH 7, 1929.

BIDDER.	Estimated Price.	Time.
Bethlehem Steel Company.....	\$17,530 00	8 weeks
Lorain Steel Company.....	17,287 00	10 "
Barbour Stockwell Company.....	17,248 00	24 "
William Wharton & Co., Inc.*.....	16,241 00	8 "

\* Awarded. Contract 929.

## APPENDIX VIII.

BID FOR FURNISHING AND DELIVERING 1,050 TONS, MORE OR LESS, OF STEEL RAILS. MARCH 11, 1929.

BIDDER.	Estimated Price.
Bethlehem Steel Company.....	\$60,048 60

Bid rejected.

## APPENDIX IX.

BID FOR FURNISHING AND DELIVERING ABOUT 311,400 POUNDS OF ROLLED STEEL, CONSISTING OF ANGLE BARS, TIE-PLATES AND SHIMS. MARCH 14, 1929.

BIDDER.	Estimated Price.
Bethlehem Steel Company *.....	\$10,097 42

\* Awarded. Contract 930.

## APPENDIX X.

BID FOR FURNISHING AND DELIVERING BOLTS AND SPIKES. MARCH 14, 1929.

BIDDER.	Estimated Price.
Bethlehem Steel Company *.....	\$4,039 25
Pittsburgh Forge & Iron Company **.....	2,440 00

\* Bid on three items. Awarded. Contract 930.

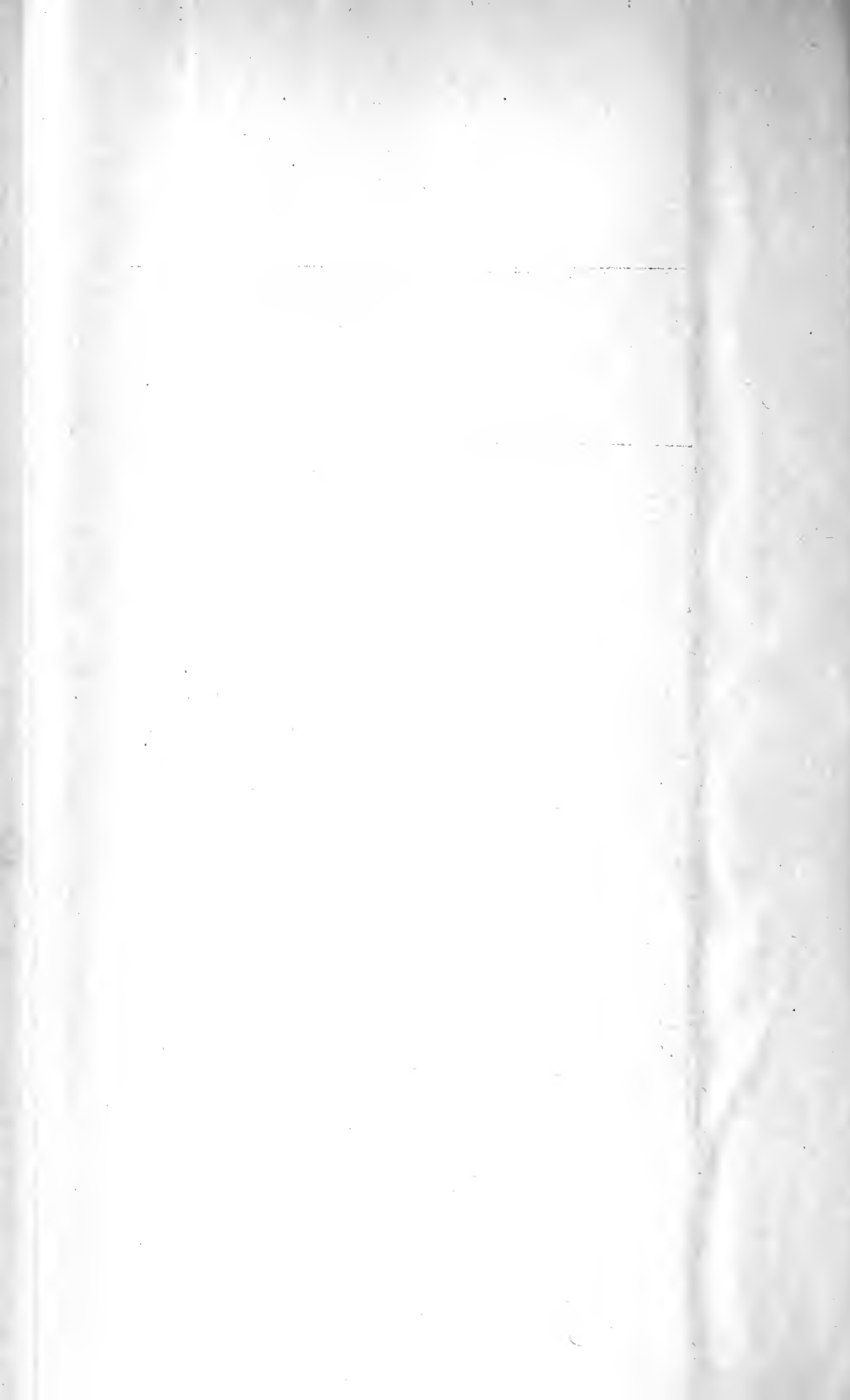
\*\* Bid on 1 item only.

# APPENDIX XI.

BIDS FOR SECTION 50, DORCHESTER RAPID TRANSIT, MARCH 20, 1929.

BIDDERS AND ADDRESSES	a	2a	3a	b	2b	c	2c	3c	4c	5c	6c	d	e	2e	3e	f	2f	3f	g	2g	k	m	2m	n	p	2p	3p	r	s	Totals	Time of Completion
	Earth Excavation 10,000 Cu Yds.	Rock Excavation 25,000 Cu Yds.	Gravel Borrow 3,500 Cu Yds.	Masonry Removed 2,000 Cu Yds.	Stone Masonry Rebuilt 350 Cu Yds.	Concrete 5,000 Cu Yds.	Small Stone Concrete 100 Cu Yds.	Cinder Concrete 200 Cu Yds.	Mortar 100 Cu Yds.	Granolithic Walks 2-4" 8-12" 84 Yds.	White Edge 1,200 Lin Ft.	Brick Masonry 50 Cu Yds.	Vitrified Pipe 4" 6" 8" 10" 12" 250 Lin Ft.	Vitrified Pipe 10"-12" 1,000 Lin Ft.	Vitrified Pipe 15"-to 36" 250 Lin. Ft.	Reinforcing Bars and Other Steel and Iron 225 Tons	Structural Steel 135 Tons.	Wire Cloth 4,000 Sq. Ft.	Grout 1-4 50 Cu Yds.	Grout 1-4 50 Cu Yds.	Incidental Work Ribs, Supporting Structures, Lump Sum	Altering Fine Tree Bench Bridge Lump Sum	Removing Adams Street Bridge Lump Sum.	Wall Finish Brick 3,000 Sq. Yds.	Granite Edging 1,500 Lin. Ft.	Bituminous Maradum Paving 4,500 Sq. Yds.	Granite Block Gutters 160 Sq Yds	Preparing Site, Lump Sum	Copper Roof and Flashing Lump Sum.		
Joseph P. McCabe, 20 Central St., Boston.....	\$1 50	\$4 85	\$1 25	\$5 00	\$12 00	\$22 00	\$30 00	\$10 00	\$16 00	\$3 25	\$0 50	\$40 00	\$1 00	\$1 50	\$7 50	\$100 00	\$25 00	\$0 05	\$20 00	\$15 00	5,500 00	500 00	\$1,500 00	\$1 00	\$2 00	\$1 00	\$5 00	\$1,000 00	\$750 00	\$339,450 00	250 Days
Matthew Cummings Co., Inc., 43 Tremont St., Boston.....	1 00	4 25	1 40	4 90	8 00	20 00	30 00	11 00	22 00	3 00	60	30 00	1 50	1 50	5 00	84 00	30 00	12	25 00	16 00	25,000 00	1,000 00	2,000 00	3,000 00	3,000 00	1 75	5 00	1,000 00	65 00	323,475 00	270 Days
Reynolds Bros., Inc., 179 Summer St., Boston.....	3 40	3 40	2 00	3 40	10 00	20 00	25 00	17 50	30 00	3 00	1 00	40 00	75	1 25	3 00	100 00	80 00	25	30 00	25 00	5,000 00	2,000 00	1,000 00	1,230 00	2 00	2 00	6 00	2,500 00	700 00	320,297 50	250 Days
Bruno & Petatti, 18 Tremont St., Boston.....	2 00	4 50	2 00	3 00	8 00	21 00	25 00	18 00	25 00	3 00	30	40 00	1 00	1 50	4 00	80 00	20 00	20	30 00	25 00	1,000 00	300 00	1,000 00	1,230 00	2 00	2 00	3 50	4 00	600 00	318,560 00	250 Days
A. DeStefano & Son, Inc., 268 Summer St., E. Boston.....	3 50	3 50	1 00	3 50	7 00	18 00	18 00	8 00	18 00	2 50	60	25 00	75	1 50	4 00	80 00	25 00	10	10 00	5 00	25,000 00	200 00	1,500 00	4,700 00	2 00	1 70	2 50	2 50	1,000 00	306,735 00	250 Days
Westcott & Munroe, 95 High St., N. Attleboro.....	3 00	3 00	1 20	3 00	10 00	20 00	25 00	8 00	25 00	3 00	25	40 00	80	1 00	4 00	60 00	25 00	12	15 00	12 00	20,000 00	1,000 00	5,000 00	2,500 00	2 00	2 00	3 00	5 00	600 00	307,752 50	250 Days
Coleman Bros., Inc., 245 State St., Boston.....	3 40	3 40	1 20	3 40	10 00	20 00	25 00	7 00	20 00	2 50	50	40 00	1 00	1 30	4 00	85 00	35 00	10	10 00	10 00	1,000 00	2,000 00	3,000 00	3,000 00	3 00	2 40	2 50	4 50	1,000 00	294,050 00	225 Days
C. M. Callahan, Inc., 23 S. Fairview St., Roslindale.....	2 95	2 95	1 50	3 00	5 00	20 00	25 00	3 00	25 00	2 50	50	40 00	1 00	2 00	3 00	80 00	25 00	10	10 00	5 00	10,000 00	1,000 00	1,500 00	4,500 00	3 00	3 00	6 00	3 00	2,000 00	294,075 00	200 Days
J. A. Sanguella, 303 Park St., Building, Boston.....	2 90	2 90	1 50	2 90	14 00	18 00	20 00	6 00	20 00	2 00	50	40 00	1 00	1 30	4 00	85 00	25 00	10	15 00	15 00	1,000 00	2,000 00	3,000 00	3,000 00	3 00	2 40	2 50	4 50	1,000 00	294,075 00	200 Days
Cesedra & Co., 65 School St., Milford.....	3 00	3 00	1 70	3 00	14 00	18 00	20 00	6 00	20 00	2 00	50	40 00	1 00	1 30	4 00	85 00	25 00	10	15 00	15 00	1,000 00	2,000 00	3,000 00	3,000 00	3 00	2 40	2 50	4 50	1,000 00	294,075 00	200 Days
M. F. Gadda, 6 Beacon St., Boston.....	2 40	2 40	1 20	2 40	8 00	18 00	20 00	6 00	20 00	2 00	50	40 00	1 00	1 30	4 00	85 00	25 00	10	15 00	15 00	1,000 00	2,000 00	3,000 00	3,000 00	3 00	2 40	2 50	4 50	1,000 00	294,075 00	200 Days
J. C. Coleman & Son, Inc., 1620 Tremont St., Boston.....	2 25	2 25	1 25	2 25	10 00	18 00	20 00	6 00	20 00	2 00	50	40 00	1 00	1 30	4 00	85 00	25 00	10	15 00	15 00	1,000 00	2,000 00	3,000 00	3,000 00	3 00	2 40	2 50	4 50	1,000 00	294,075 00	200 Days
Paul Caputo, 18 Tremont St., Boston.....	1 25	3 95	1 50	2 30	12 00	16 00	20 00	6 00	20 00	2 00	50	40 00	1 00	1 30	4 00	85 00	25 00	10	15 00	15 00	1,000 00	2,000 00	3,000 00	3,000 00	3 00	2 40	2 50	4 50	1,000 00	294,075 00	200 Days
William J. Barry, 431 Cummins Highway, Boston.....	3 00	3 00	1 00	3 00	15 00	18 00	20 00	6 00	20 00	2 00	50	40 00	1 00	1 30	4 00	85 00	25 00	10	15 00	15 00	1,000 00	2,000 00	3,000 00	3,000 00	3 00	2 40	2 50	4 50	1,000 00	294,075 00	200 Days
A. G. Tomasello & Son, Inc., 250 Stuart St., Boston.....	2 30	2 30	1 00	2 30	12 00	16 00	20 00	6 00	20 00	2 00	50	40 00	1 00	1 30	4 00	85 00	25 00	10	15 00	15 00	1,000 00	2,000 00	3,000 00	3,000 00	3 00	2 40	2 50	4 50	1,000 00	294,075 00	200 Days
C. & R. Construction Co., 75 Bradlee St., Roslindale.....	3 70	3 70	.50	3 70	4 00	15 00	15 00	4 00	15 00	1 50	50	40 00	1 00	1 30	4 00	85 00	25 00	10	15 00	15 00	1,000 00	2,000 00	3,000 00	3,000 00	3 00	2 40	2 50	4 50	1,000 00	294,075 00	200 Days
* William J. Sullivan, 50 Dartmouth St., Somerville.....	2 50	2 50	1 00	2 50	7 00	16 00	20 00	7 00	20 00	2 00	50	40 00	1 00	1 30	4 00	85 00	25 00	10	15 00	15 00	1,000 00	2,000 00	3,000 00	3,000 00	3 00	2 40	2 50	4 50	1,000 00	294,075 00	200 Days

\* Awarded contract 1035.



## APPENDIX XII.

BIDS FOR FURNISHING AND DELIVERING 32,160 LINEAL FEET, MORE OR LESS, OF 2/0 TROLLEY WIRE. MARCH 25, 1929.

BIDDER.	Estimated Price.
Standard Underground Cable Company.....	13.35c per foot.
Bridgeport Brass Company.....	30.46c per pound.

All bids rejected.

## APPENDIX XIII.

BIDS FOR FURNISHING, DELIVERING AND INSTALLING WELDED STEEL PIPE, ADAMS STREET BRIDGE, MILTON, DORCHESTER RAPID TRANSIT, APRIL 16, 1929.

BIDDER.	Estimated Price.	Time.
James Russell Boiler Works Company.....	\$6,000.00	60 days
Walsh Holyoke Steam Boiler Works, Inc...	5,423.00	50 "
C. & R. Construction Company.....	4,950.00	40 "

No contract awarded. Work done by the Metropolitan District Commission.



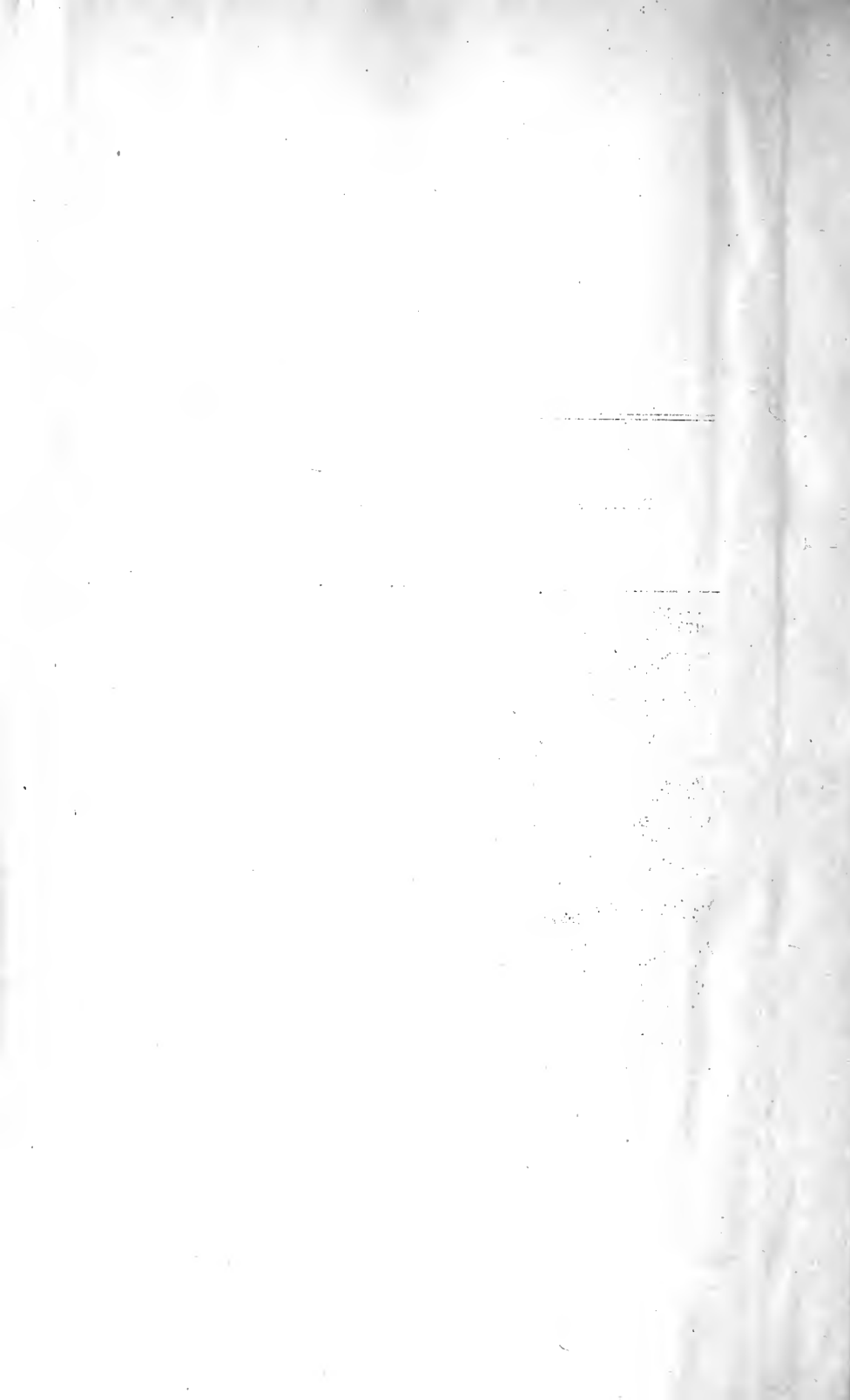


# APPENDIX XIV.

BIDS FOR SECTION 5C, DORCHESTER RAPID TRANSIT, JUNE 10, 1929.

BIDDER AND ADDRESS.	a	2a	3a	b	c	2c	3c	4c	5c	6c	d	e	2e	3e	f	2f	3f	g	2g	k	n	r	Totals.	Time of Completion.
	Earth Excavation 12,000 Cu. Yds.	Rock Excavation 4,000 Cu. Yds.	Gravel Borrow 15,000 Cu. Yds.	Masonry Removed 100 Cu. Yds.	Concrete 1,500 Cu. Yds.	Small Stone Concrete 200 Cu. Yds.	Cinder Concrete 200 Cu. Yds.	Mortar 100 Cu. Yds.	Granolithic Walks 1,200 Sq. Yds.	White Edge 1,500 Lin. Ft.	Brick Masonry 100 Cu. Yds.	Vitrified Pipe 4"-6"-8" 1,500 Lin. Ft.	Vitrified Pipe 10"-12" 1,000 Lin. Ft.	Vitrified Pipe 15"-36" 100 Lin. Ft.	Reinforcing Rods, Etc. 80 Tons.	Structural Steel 30 Tons.	Wire Cloth 1,000 Sq. Ft.	Grout (1-1) 50 Cu. Yds.	Grout (1-4) 50 Cu. Yds.	Incidental Work, Risks Supporting Structures Lump Sum.	Wall Finish Rubbing 1,500 Sq. Yds.	Preparing Site Lump Sum.		
Reynolds Bros., Inc., 170 Summer St., Boston.	\$2 00 24,000 00	\$3 00 20,000 00	\$1 75 26,250 00	\$10 00 1,000 00	\$27 50 41,250 00	\$30 00 3,000 00	\$20 00 4,000 00	\$35 00 3,500 00	\$3 00 3,600 00	\$1 00 1,200 00	\$35 00 3,500 00	\$1 00 1,500 00	\$1 50 1,500 00	\$3 00 300 00	\$120 00 9,600 00	\$50 00 1,500 00	\$0 50 500 00	\$20 00 1,000 00	\$17 50 875 00	5,000 00	\$0 50 750 00	3,000 00	\$156,825 00	Oct. 15, 1929.
Banasar Const. Co., 9 Cattleton St., Jamaica Plain.	3 00 36,000 00	3 00 12,000 00	1 10 16,500 00	3 50 350 00	16 00 24,000 00	18 00 1,800 00	9 00 1,800 00	16 00 1,600 00	3 00 3,600 00	0 50 600 00	25 00 2,500 00	0 50 750 00	1 00 1,000 00	4 00 400 00	\$3 00 6,640 00	30 00 900 00	0 10 100 00	18 00 900 00	15 00 750 00	3,400 00	0 80 1,200 00	17,900 00	133,790 00	Oct. 15, 1929.
William J. Sullivan, 50 Dartmouth St., Somerville.	2 60 31,200 00	2 60 10,400 00	1 00 15,000 00	4 00 400 00	17 00 25,500 00	18 00 1,800 00	5 00 1,000 00	20 00 2,000 00	3 00 3,600 00	0 25 300 00	35 00 3,500 00	1 00 1,500 00	1 00 1,000 00	3 00 300 00	\$0 00 6,400 00	25 00 750 00	0 10 100 00	15 00 750 00	10 00 500 00	4,000 00	0 50 750 00	10,900 00	120,750 00	Oct. 15, 1929.
Joseph P. McCabe, Inc., 20 Central St., Boston.	2 15 25,800 00	2 15 8,600 00	1 25 18,750 00	2 00 200 00	20 00 30,000 00	18 00 1,800 00	7 00 1,400 00	20 00 2,000 00	2 75 3,300 00	0 50 600 00	40 00 4,000 00	0 90 1,350 00	1 00 1,000 00	4 00 400 00	\$5 00 6,800 00	30 00 900 00	0 10 100 00	20 00 1,000 00	15 00 750 00	500 00	0 60 900 00	10,000 00	120,150 00	Oct. 15, 1929.
Monroe & Westcott, Inc., 95 High St., N. Attleboro.	2 00 24,000 00	2 00 8,000 00	1 00 15,000 00	4 00 400 00	19 00 28,500 00	20 00 2,000 00	6 00 1,200 00	20 00 2,000 00	3 00 3,600 00	0 25 300 00	40 00 4,000 00	0 80 1,200 00	1 00 1,000 00	4 00 400 00	\$0 00 7,200 00	25 00 750 00	0 12 120 00	12 00 600 00	10 00 500 00	10,000 00	0 50 750 00	4,000 00	115,520 00	Oct. 15, 1929.
A. DeStefano & Son, Inc., 288 Sumner St., E. Boston.	2 40 28,800 00	2 40 9,600 00	0 80 12,000 00	5 00 500 00	15 00 22,500 00	15 00 1,500 00	8 00 1,600 00	15 00 1,500 00	2 00 2,400 00	0 40 400 00	25 00 2,500 00	1 25 1,875 00	1 50 1,500 00	1 50 150 00	70 00 5,600 00	30 00 900 00	0 02 20 00	6 00 300 00	3 00 150 00	5,000 00	0 50 750 00	10,000 00	109,625 00	Oct. 15, 1929.
J. A. Singarella, 303 Park Sq. Bldg., Boston.	0 75 9,000 00	6 00 24,000 00	1 20 18,000 00	3 00 300 00	16 00 24,000 00	20 00 2,000 00	5 00 1,000 00	15 00 1,500 00	2 50 3,000 00	0 50 600 00	30 00 3,000 00	0 75 1,125 00	1 00 1,000 00	3 00 300 00	\$2 00 6,560 00	25 00 750 00	0 10 100 00	5 00 250 00	5 00 250 00	6,000 00	0 60 900 00	1,000 00	104,635 00	Oct. 15, 1929.
William J. Barry, 431 Cummins Highway, Boston.	2 00 24,000 00	2 00 8,000 00	0 75 11,250 00	5 00 500 00	18 50 27,750 00	18 50 1,850 00	10 00 2,000 00	20 00 2,000 00	3 00 3,600 00	1 00 1,200 00	36 00 3,600 00	1 50 2,250 00	2 50 2,500 00	3 50 350 00	\$0 00 6,400 00	40 00 1,200 00	0 25 250 00	20 00 1,000 00	20 00 1,000 00	1,000 00	0 50 750 00	1,000 00	103,450 00	Oct. 15, 1929.
A. G. Tomasello & Son, Inc., 250 Stuart St., Boston.	1 50 18,000 00	1 50 6,000 00	1 00 15,000 00	2 00 300 00	18 00 27,000 00	18 00 1,800 00	3 00 600 00	5 00 500 00	2 50 3,000 00	0 25 300 00	30 00 3,000 00	0 60 900 00	0 80 800 00	3 00 300 00	\$0 00 6,400 00	20 00 900 00	0 10 100 00	5 00 250 00	5 00 250 00	500 00	0 60 900 00	7,500 00	94,300 00	Oct. 15, 1929.
C. & R. Const. Co., 75 Braden St., Roslindale.	0 50 6,000 00	0 50 2,000 00	0 50 7,500 00	0 70 70 00	12 00 18,000 00	12 00 1,200 00	2 00 400 00	8 00 800 00	3 00 3,600 00	0 20 240 00	15 00 1,500 00	0 60 900 00	0 60 600 00	0 60 60 00	\$0 00 4,000 00	40 00 1,200 00	0 02 20 00	2 00 100 00	1 00 50 00	33,500 00	0 30 450 00	2,000 00	\$4,170 00	Oct. 15, 1929.
Peerless Const. Co., 40 Court St., Boston.	0 50 6,000 00	3 00 12,000 00	0 50 7,500 00	3 00 300 00	10 50 15,750 00	10 50 1,050 00	9 00 1,800 00	12 00 1,200 00	3 00 3,600 00	0 50 600 00	31 00 3,100 00	0 30 450 00	0 50 500 00	1 80 180 00	\$0 00 7,200 00	35 00 1,050 00	0 10 100 00	13 00 650 00	9 50 475 00	5,000 00	0 50 750 00	2,000 00	75,775 00	Oct. 15, 1929.

\* Awarded contract 937.



## APPENDIX XV.

BIDS FOR FURNISHING AND DELIVERING ABOUT 360 LINEAR FEET OF 12-INCH AND 36 LINEAR FEET OF 16-INCH GRADE B CAST-IRON PIPE. JUNE 19, 1929.

BIDDER.	Estimated Price.
Warren Foundry and Pipe Company.....	\$680 76
R. D. Wood Company *.....	657 54

\* Order placed.

## APPENDIX XVI.

BIDS FOR FURNISHING AND DELIVERING SPECIAL TRACK WORK, MATAPAN STATION, DORCHESTER RAPID TRANSIT. JUNE 19, 1929.

BIDDER.	ESTIMATED PRICE.	
	Manganese Steel.	Alloy Steel.
Bethlehem Steel Company.....	\$37,675	\$41,090
William Wharton, Jr., & Co., Inc.....	34,526	34,526
Lorain Steel Company.....	33,926	33,926
Barbour Stockwell Company *.....	33,338	33,338

\* Awarded. Contract 938.

## APPENDIX XVII.

BIDS FOR CONSTRUCTING PLATFORMS, WALKS AND ROADWAY, CEDAR GROVE STATION, DORCHESTER RAPID TRANSIT. JULY 25, 1929.

BIDDER.	Estimated Price.
Hill & Delaney.....	\$8,128.75
A. G. Tomasello & Son, Inc.....	7,770 00
Banspar Construction Company.....	7,341.25
Leo J. Nawn, Inc.....	7,321.25
Alphonsus L. Walsh.....	7,055.25
J. J. Brock.....	6,420.00
Peerless Construction Company *.....	5,732.50

\* Awarded. Contract 940.

## APPENDIX XVIII.

BIDS FOR FURNISHING EIGHT DRAFTING TABLES. TRAFFIC TUNNEL.  
AUGUST 5, 1929.

BIDDER.	Estimated Price.	
	A	B
James A. Glass.....	\$1,704	\$1,584
Graham & Cameron, Inc.....	1,216	1,176
Herbert W. Doten.....	1,000	1,080
Spaulding & Ringland.....	880	920
Iverson Brothers *.....	866	866

\* Awarded. Contract V-I.

## APPENDIX XIX.

BIDS FOR FURNISHING AND INSTALLING FIREPIPE, HYDRANTS, ETC.,  
MATTAPAN YARD, DORCHESTER RAPID TRANSIT. AUGUST 14, 1929.

BIDDER.	Estimated Price.
Anthony Baruffaldi.....	\$6,461 25
Peerless Construction Company.....	5,789 50
A. Piatelli & Co.....	5,524 75
James J. Brock *.....	4,954 05

\* Awarded. Contract 943.

## APPENDIX XX.

BIDS FOR ALTERATIONS, MATTAPAN CARMEN'S LOBBY, DORCHESTER  
RAPID TRANSIT. SEPTEMBER 16, 1929.

BIDDER.	Estimated Price.
P. J. Cantwell & Son.....	\$7,346 00
Joseph A. Singarella.....	6,900 00
John Bowen Company.....	6,400 00
M. S. Kelliher Company.....	5,980 00
Lamont Brothers, Inc.....	5,889 00
Suffolk Construction Company, Inc.....	5,335 00
Archdeacon & Sullivan *.....	5,245 00

\* Awarded. Contract 944.

## APPENDIX XXI.

BIDS FOR FURNISHING AND ERECTING A WOVEN WIRE FENCE, CONCRETE CURB, POST FOUNDATIONS, WALL, ETC., MATTAPAN YARD, DORCHESTER RAPID TRANSIT. SEPTEMBER 30, 1930.

BIDDER.	Estimated Price.
Security Fence Company.....	\$7,799 90
Joseph A. Singarella.....	7,685 50
Banspar Construction Company *.....	7,045 75

\* Awarded. Contract 945.

## APPENDIX XXII

BIDS FOR MATTAPAN STATION BUILDING, DORCHESTER RAPID TRANSIT. OCTOBER 10, 1929.

BIDDER.	Estimated Price.
Joseph A. Singarella *.....	\$7,250 00

\* Awarded. Contract 946.

## APPENDIX XXIII.

BIDS FOR BUSWAY, PLATFORMS, ETC., MATTAPAN STATION, DORCHESTER RAPID TRANSIT. OCTOBER 21, 1929.

BIDDER.	Estimated Price.
Joseph A. Singarella.....	\$31,772 50
A. G. Tomasello & Son, Inc.*.....	19,385 00

\* Awarded. Contract 947.

## APPENDIX XXIV.

BIDS FOR VENTILATION CHAMBER, SHAWMUT STATION, DORCHESTER  
RAPID TRANSIT. NOVEMBER 7, 1929.

BIDDER.	Estimated Price.	Time.
Frank Losordo Company, Inc.....	\$7,970 00	30 days
A. G. Tomasello & Son, Inc.....	5,125 00	30 "
Banspar Construction Company.....	4,848 00	40 "
Brophy Contracting Company, Inc.*.....	4,035 00	30 "

\* Awarded. Contract 948.















